

March 7, 2019

Mr. Gary Priscott
New York State Department of Environmental Conservation
1679 NY Route 11
Kirkwood, NY 13795-2019

RE: Emerging Contaminant Sampling and Analysis
Former Ithaca Gun Factory BCP (Site #C755019)
Ithaca, New York

FILE: 17546/63923

Dear **Mr. Priscott**:

This letter report summarizes the results of the groundwater sampling and analysis for per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane at the Former Ithaca Gun Factory BCP site (the Site) in the City of Ithaca, New York. Activities summarized in this report were completed in response to the New York State Department of Environmental Conservation (NYSDEC) letter requesting sampling for emerging contaminants at the site (June 22, 2018) and in accordance with NYSDEC guidance materials.

GROUNDWATER SAMPLING

The PFAS and 1,4-dioxane samples were collected on December 19, 2018. Groundwater samples were collected from three monitoring wells (MW-01R, MW-09, and MW-10). The monitoring well locations are shown on **Figure 1**. These wells were selected to represent upgradient (MW-01) and downgradient groundwater quality with respect to the Eastern Parcel (MW-09) and the Western Parcel (MW-10).

Each well was purged and sampled via bailing methods using a PFAS free disposable bailer and string. Prior to purging at each well location, the water level meter was thoroughly decontaminated using PFAS-free water and Alconox® detergent.

Water quality parameters including temperature, specific conductance, and pH, were measured using a Hanna Hi 991301 water quality meter. The measured water quality parameters and water levels were recorded on groundwater sampling forms (**Attachment A**) along with visual and olfactory observations noted at the start and end of purging.

The PFAS and 1,4-dioxane groundwater samples were collected directly from the bailers into the laboratory-provided bottleware. PFAS samples were collected in certified PFAS-free bottles, immediately capped, labelled, and placed into a cooler containing ice before collecting the 1,4-dioxane samples. Additionally, the PFAS were stored and shipped separately from the 1,4-dioxane samples. The sample identifier, location, date, time, and sample collector were recorded on the groundwater sampling log and a chain-of-custody form. Sample coolers were delivered to the Test America shipping center in Syracuse, New York. The samples were shipped by Test America to the Test America facility in Burlington, Vermont for the PFAS analyses. The 1,4-dioxane analyses were performed by the Buffalo, New York facility.

A single set of quality control/quality assurance samples was collection. The QA/QC samples for the PFAS analyses included one field duplicate (FD) sample, one matrix spike/matrix spike duplicate (MS/MSD) sample pair, one equipment blank (EB) and one field reagent blank (FRB). The QC samples for 1,4-dioxane included one FD sample, and one MS/MSD sample pair.



The PFAS and associated QC samples were analyzed in accordance with USEPA Method 537 (modified) for the 21 PFAS analytes. The 1,4-dioxane samples were analyzed using USEPA Method 8270D with selected ion monitoring (SIM). The laboratory provided a full category B deliverable per the NYSDEC analysis and reporting guidelines. The analytical data package is provided in **Attachment B**.

The data package was reviewed by a data validator. The Data Usability Summary Report (DUSR) is provided in **Attachment C**.

As required, the validated results of the analyses have been uploaded to NYSDEC's EQUIS database in an EDD-format compliant with NYSDEC electronic data submission requirements.

GROUNDWATER SAMPLE RESULTS

The analytical results from the December 2018 sampling event are presented in **Table 1**. The following observations are based on a review of the analytical results.

- 1,4-Dioxane was detected in the two downgradient wells. Detected concentrations were 0.47 µg/L in MW-09 and 0.20 µg/L in MW-10.
- PFOS was detected in each of the three groundwater samples (and corresponding field duplicate). The detected concentrations ranged from 2.3 ng/L at MW-09 to 5.2 ng/L at MW-10. Upgradient well, MW-01R contained concentrations similar to that identified in downgradient well, MW-09. The detected concentrations are well below the LHA of 70 ng/L.
- PFOA was detected in each of the three groundwater samples (and the field duplicate). The detected concentrations ranged from 3.2 ng/L (estimated high) at MW-10 to 5.8 ng/L (estimated high) at MW-09. Similar to PFOS results, upgradient well, MW-01R contained concentrations similar to that identified in downgradient well, MW-09. The detected concentrations are well below the LHA of 70 ng/L.
- Several additional PFASs were detected in each sample and the field duplicate. The detected concentrations ranged from 0.27 ng/L (estimated) to 12 ng/L.

If you have any questions regarding these data, please do not hesitate to contact me at your earliest convenience.

Very truly yours,
O'BRIEN & GERE ENGINEERS, INC.




Deborah Y. Wright
Senior Managing Scientist

Attachments: A – Groundwater Sampling Logs
B – Analytical Data Package
C – Data Usability Summary Report

cc: Frost Travis – IFR Development



LEGEND

-  MONITORING WELL
-  FENCE
-  BCP PARCEL BOUNDARY

FORMER
ITHACA GUN FACTORY SITE
ITHACA, NEW YORK

**SAMPLE LOCATIONS
(DECEMBER 19, 2018)**



17546.63923
MARCH 2019




O'BRIEN & GERE ENGINEERS, INC.

Table 1
Former Ithaca Gun Factory BCP (Site #C755019)
Ithaca, New York
1,4-Dioxane and PFAS Analytical Summary

Parameter Name	Field Sample ID		MW-01R-121918	MW-09-121918	MW-10-121918	FD-01-121918
	Location		MW-01R	MW-09	MW-10	MW-10
	Sample Date		12/19/2018	12/19/2018	12/19/2018	12/19/2018
	Sample Delivery Group		4801470401	4801470401	4801470401	4801470401
	Units	Method				
SODIUM 1H,1H,2H,2H-PERFLUOROOCANE SULFONATE (6:2)	ng/l	E537-LL	16 U	4.3 JL	17 UJ	17 UJ
SODIUM 1H,1H,2H,2H-PERFLUORODECANE SULFONATE (8:2)	ng/l	E537-LL	16 U	17 U	17 UJ	17 UJ
PERFLUOROUNDECANOIC ACID (PFUnA)	ng/l	E537-LL	1.6 U	1.7 U	1.7 U	1.7 U
PERFLUOROTRIDECANOIC ACID (PFTriA)	ng/l	E537-LL	1.6 U	1.7 U	0.27 J	1.7 U
PERFLUOROTETRADECANOIC ACID (PFTeA)	ng/l	E537-LL	1.6 U	1.7 U	1.7 U	1.7 U
PERFLUOROPENTANOIC ACID (PFPeA)	ng/l	E537-LL	11	12	11	9.2
Perfluorooctanoic acid (PFOA)	ng/l	E537-LL	5.6 JH	5.8 JH	3.2 JH	5.1 JH
PERFLUOROOCANE SULFONIC ACID (PFOS)	ng/l	E537-LL	2.6	2.3	5.1	5.2
Perfluorooctane Sulfonamide (FOSA)	ng/l	E537-LL	1.6 U	1.7 U	1.7 U	1.7 U
PERFLUORONONANOIC ACID	ng/l	E537-LL	1.6 U	0.57 J	0.44 J	0.52 J
PERFLUOROHEXANOIC ACID (PFHxA)	ng/l	E537-LL	11	9.7 JH	3.3 JH	3 JH
PERFLUOROHEXANESULFONIC ACID	ng/l	E537-LL	0.49 J	0.28 J	1.7 U	0.34 J
Perfluoroheptanoic Acid (PFHpA)	ng/l	E537-LL	3.1	2.9	1.9	1.6 J
PERFLUOROHEPTANE SULFONATE (PFHpS)	ng/l	E537-LL	1.6 U	1.7 U	1.7 U	1.7 U
PERFLUORODODECANOIC ACID (PFDoA)	ng/l	E537-LL	1.6 U	1.7 U	0.32 J	1.7 U
PERFLUORODECANOIC ACID (PFDA)	ng/l	E537-LL	1.6 U	1.7 U	0.49 J	1.7 U
PERFLUORODECANE SULFONIC ACID	ng/l	E537-LL	1.6 U	1.7 U	1.7 U	1.7 U
PERFLUOROBUTYRIC ACID (PFBA)	ng/l	E537-LL	10	8.4	6.1	7
PERFLUOROBUTANESULFONIC ACID	ng/l	E537-LL	1.8	1.6 J	3.5	3.5
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	ng/l	E537-LL	16 U	17 U	17 U	17 U
2-(N-methyl perfluorooctanesulfonamido) acetic acid	ng/l	E537-LL	16 U	17 U	17 U	17 U
1,4-Dioxane	ug/l	SW8270DSIM	0.2 U	0.47	0.21	0.20

Notes:
ng/L - nanograms per liter
ug/L - micrograms per liter
J - Result is less than the reporting limit but greater than or equal to the method detection limit and the concentrations is an approximate value
U - Result was not detected
BOLD - Detected concentration
JH - Result is qualified as estimated high
JL - Result is qualified as estimated low



Groundwater Sampling Logs



Conventional Groundwater Sampling Log

Well ID: MW-01R
Northing:
Easting:

Site Name: Ithaca GM
Site Location: Ithaca, NY
Project #: 63923
Sampling Method: Bailer
Equipment Used: Disposable Bailer
Pump/Controller ID#: NA
Field Personnel: JMN
Date: 12/19/18
Weather: 30F Sunny

Well information:
Installed Depth of Well*: 65.40 ft. bmp.
Measured Depth of Well*: 63.30 ft. bmp.
Depth to Water*: 38.08 ft. bmp.
Water Column Length: 25.27 ft.
Well Diameter: 4 in.
Well Volume Multipliers:
1 in. = 0.041 gal/ft
2 in. = 0.163 gal/ft
4 in. = 0.653 gal/ft
6 in. = 1.469 gal/ft
8 in. = 2.611 gal/ft
* Measurement Point:
x Well Casing
Protective Casing
Other:
Well Volume: 16.5 gal.
Pump Intake Depth*: ft. bmp.

Initial Observations
Start Purge Time: 1100
Initial Water Level: 38.08 ft. bmp.
Color: Clear
Odor: Strong but chemical
Sheen/Free Product: none
indicate units

Table with 6 columns: Elapsed Time (Minutes), Volume Purged (gallons), Temperature (Celsius), pH (S.I. units), Conductivity (mS/cm), and Other. Data row shows initial values: 0, 18.2, 7.76, 1.23.

Final Observations
End Purge Time: 1130
Final Water Level: Dry ft. bmp.
Total Volume Purged: 16 gal.
Color: Dark Grey
Odor: None
Sheen/Free Product: None

Analytical Sample ID: MW-01R-12/19/18
Date: 12/19/18
Time: 1410

Table with 7 columns: Container Size, Container Type, Quantity, Field Filtered?, Preservative, Analysis, Laboratory. Rows show 250 ml plastic and 1000 ml amber glass containers.

Notes:
Well purged by after 1 well volume.



Analytical Data Package

ANALYTICAL REPORT

Job Number: 480-147040-1

Job Description: Former Ithaca Gun Site

For:

O'Brien & Gere Inc of North America
PO BOX 4873
Syracuse, NY 13221

Attention: Jason Newton



Approved for release.
Anthony R Strollo
Project Management Assistant I
1/15/2019 2:07 PM

Designee for
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01/15/2019

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

TestAmerica Laboratories, Inc.

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**Job Narrative
480-147040-1**

Comments

No additional comments.

Receipt

The samples were received on 12/20/2018 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 3.2° C.

GC/MS Semi VOA

Method(s) 8270D SIM ID: The 1,4-Dioxane result reported for samples MW-09-121918 (480-147040-3[MS]) and MW-09-121918 (480-147040-3[MSD]) have a E flag qualifier indicating the results are over the calibration range on the raw data. The actual amounts are within the calibration range; however, the E flag is generated based upon the bias corrected concentration. The LIMS system calculates a bias correction based on the recovery of the 1,4-Dioxane d8 isotope.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

Method(s) 537 (modified): Internal standard responses were outside of acceptance limits for the following samples: MW-10-121918 (480-147040-4) and FD-01-121918 (480-147040-6). The sample(s) shows evidence of matrix interference.

Method(s) 537 (modified): M2-6:2 FTS and M2-8:2 FTS Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for the following samples: MW-10-121918 (480-147040-4) and FD-01-121918 (480-147040-6). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): M2-6:2 FTS Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following samples: MW-09-121918 (480-147040-3), MW-09-121918 (480-147040-3[MS]) and MW-09-121918 (480-147040-3[MSD]). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): 13C2 PFHxA Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: MW-09-121918 (480-147040-3), MW-09-121918 (480-147040-3[MS]), MW-09-121918 (480-147040-3[MSD]), MW-10-121918 (480-147040-4) and FD-01-121918 (480-147040-6). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). All detection limits are below the lower calibration.

Method(s) 537 (modified): The method blank for preparation batch 200-138726 and analytical batch 200-138864 contained Perfluorooctanoic acid (PFOA) and Perfluoroundecanoic acid (PFUnA) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-147040-1	FB-01-121918	Water	12/19/18 10:25	12/20/18 01:00
480-147040-2	EB-01-121918	Water	12/19/18 10:35	12/20/18 01:00
480-147040-3	MW-09-121918	Water	12/19/18 12:00	12/20/18 01:00
480-147040-4	MW-10-121918	Water	12/19/18 13:50	12/20/18 01:00
480-147040-5	MW-01R-121918	Water	12/19/18 14:10	12/20/18 01:00
480-147040-6	FD-01-121918	Water	12/19/18 00:00	12/20/18 01:00

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: FB-01-121918

Lab Sample ID: 480-147040-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.28	J B	1.8	0.28	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EB-01-121918

Lab Sample ID: 480-147040-2

No Detections.

Client Sample ID: MW-09-121918

Lab Sample ID: 480-147040-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.47		0.20	0.10	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	8.4		1.7	0.34	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	12		1.7	0.63	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	9.7		1.7	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.9		1.7	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.8	B	1.7	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.57	J	1.7	0.32	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	1.7	0.37	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.28	J	1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		1.7	0.64	ng/L	1		537 (modified)	Total/NA
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	4.3	J	17	0.84	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-10-121918

Lab Sample ID: 480-147040-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.21		0.20	0.10	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	6.1		1.7	0.36	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	11		1.7	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.3		1.7	0.21	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.9		1.7	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.2	B	1.7	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.44	J	1.7	0.33	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.49	J	1.7	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.39	J B	1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.32	J	1.7	0.30	ng/L	1		537 (modified)	Total/NA
Perfluorotridecanoic acid (PFTriA)	0.27	J	1.7	0.21	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.5		1.7	0.38	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.1		1.7	0.66	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-01R-121918

Lab Sample ID: 480-147040-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	10		1.6	0.34	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	11		1.6	0.61	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	11		1.6	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.1		1.6	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.6	B	1.6	0.26	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.29	J B	1.6	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.8		1.6	0.36	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.49	J	1.6	0.21	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.6		1.6	0.62	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: FD-01-121918

Lab Sample ID: 480-147040-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.20		0.20	0.10	ug/L	1		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	7.0		1.7	0.36	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	9.2		1.7	0.65	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.0		1.7	0.21	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.7	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.1	B	1.7	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.52	J	1.7	0.33	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.5		1.7	0.38	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.34	J	1.7	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.2		1.7	0.66	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Method Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Client Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: FB-01-121918

Lab Sample ID: 480-147040-1

Date Collected: 12/19/18 10:25

Matrix: Water

Date Received: 12/20/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.36	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.66	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.21	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.28	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorooctanoic acid (PFOA)	0.28	J B	1.8	0.28	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.34	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.34	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.22	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.31	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.21	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.40	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.39	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.23	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.72	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.67	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.47	ng/L		01/02/19 13:45	01/08/19 10:41	1
Perfluorooctanesulfonamide (PFOSA)	ND		1.8	0.49	ng/L		01/02/19 13:45	01/08/19 10:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	0.40	ng/L		01/02/19 13:45	01/08/19 10:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	0.62	ng/L		01/02/19 13:45	01/08/19 10:41	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		18	0.88	ng/L		01/02/19 13:45	01/08/19 10:41	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	0.49	ng/L		01/02/19 13:45	01/08/19 10:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	99		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C4 PFHpA	81		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C4 PFOA	84		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C4 PFOS	93		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C5 PFNA	79		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C4 PFBA	80		25 - 150	01/02/19 13:45	01/08/19 10:41	1
13C2 PFHxA	88		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C2 PFDA	85		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C2 PFUnA	80		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C2 PFDoA	67		50 - 150	01/02/19 13:45	01/08/19 10:41	1
13C8 FOSA	50		25 - 150	01/02/19 13:45	01/08/19 10:41	1
13C5 PFPeA	100		25 - 150	01/02/19 13:45	01/08/19 10:41	1
13C2 PFTeA	53		50 - 150	01/02/19 13:45	01/08/19 10:41	1
d3-NMeFOSAA	63		50 - 150	01/02/19 13:45	01/08/19 10:41	1
d5-NEtFOSAA	71		50 - 150	01/02/19 13:45	01/08/19 10:41	1
M2-6:2 FTS	119		25 - 150	01/02/19 13:45	01/08/19 10:41	1
M2-8:2 FTS	86		25 - 150	01/02/19 13:45	01/08/19 10:41	1
13C3 PFBS	101		50 - 150	01/02/19 13:45	01/08/19 10:41	1

Client Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: EB-01-121918

Lab Sample ID: 480-147040-2

Date Collected: 12/19/18 10:35

Matrix: Water

Date Received: 12/20/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7	0.35	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.64	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.20	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.27	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.27	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.32	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.32	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.21	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.30	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.20	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.38	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.37	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.22	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.70	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.65	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.45	ng/L		01/02/19 13:45	01/08/19 10:57	1
Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.48	ng/L		01/02/19 13:45	01/08/19 10:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.38	ng/L		01/02/19 13:45	01/08/19 10:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.60	ng/L		01/02/19 13:45	01/08/19 10:57	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	0.85	ng/L		01/02/19 13:45	01/08/19 10:57	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.48	ng/L		01/02/19 13:45	01/08/19 10:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	95		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C4 PFHpA	82		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C4 PFOA	84		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C4 PFOS	95		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C5 PFNA	84		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C4 PFBA	74		25 - 150				01/02/19 13:45	01/08/19 10:57	1
13C2 PFHxA	84		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C2 PFDA	84		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C2 PFUnA	79		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C2 PFDoA	64		50 - 150				01/02/19 13:45	01/08/19 10:57	1
13C8 FOSA	50		25 - 150				01/02/19 13:45	01/08/19 10:57	1
13C5 PFPeA	95		25 - 150				01/02/19 13:45	01/08/19 10:57	1
13C2 PFTeDA	59		50 - 150				01/02/19 13:45	01/08/19 10:57	1
d3-NMeFOSAA	63		50 - 150				01/02/19 13:45	01/08/19 10:57	1
d5-NEtFOSAA	69		50 - 150				01/02/19 13:45	01/08/19 10:57	1
M2-6:2 FTS	125		25 - 150				01/02/19 13:45	01/08/19 10:57	1
M2-8:2 FTS	88		25 - 150				01/02/19 13:45	01/08/19 10:57	1
13C3 PFBS	81		50 - 150				01/02/19 13:45	01/08/19 10:57	1

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: MW-09-121918

Lab Sample ID: 480-147040-3

Date Collected: 12/19/18 12:00

Matrix: Water

Date Received: 12/20/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.47		0.20	0.10	ug/L		12/23/18 16:27	12/27/18 10:07	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,4-Dioxane-d8</i>	29		15 - 110				12/23/18 16:27	12/27/18 10:07	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.4		1.7	0.34	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluoropentanoic acid (PFPeA)	12		1.7	0.63	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorohexanoic acid (PFHxA)	9.7		1.7	0.20	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluoroheptanoic acid (PFHpA)	2.9		1.7	0.27	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorooctanoic acid (PFOA)	5.8 B		1.7	0.27	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorononanoic acid (PFNA)	0.57 J		1.7	0.32	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.32	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.21	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.29	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.20	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.38	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorobutanesulfonic acid (PFBS)	1.6 J		1.7	0.37	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorohexanesulfonic acid (PFHxS)	0.28 J		1.7	0.22	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.69	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorooctanesulfonic acid (PFOS)	2.3		1.7	0.64	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.45	ng/L		01/02/19 13:45	01/08/19 11:29	1
Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.47	ng/L		01/02/19 13:45	01/08/19 11:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.38	ng/L		01/02/19 13:45	01/08/19 11:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.59	ng/L		01/02/19 13:45	01/08/19 11:29	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	4.3 J		17	0.84	ng/L		01/02/19 13:45	01/08/19 11:29	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.47	ng/L		01/02/19 13:45	01/08/19 11:29	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>18O2 PFHxS</i>	88		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C4 PFHpA</i>	62		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C4 PFOA</i>	85		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C4 PFOS</i>	103		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C5 PFNA</i>	86		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C4 PFBA</i>	57		25 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C2 PFHxA</i>	45 *		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C2 PFDA</i>	93		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C2 PFUnA</i>	94		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C2 PFDoA</i>	84		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C8 FOSA</i>	64		25 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C5 PFPeA</i>	52		25 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>13C2 PFTeDA</i>	76		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>d3-NMeFOSAA</i>	62		50 - 150				01/02/19 13:45	01/08/19 11:29	1
<i>d5-NEtFOSAA</i>	78		50 - 150				01/02/19 13:45	01/08/19 11:29	1

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: MW-09-121918

Lab Sample ID: 480-147040-3

Date Collected: 12/19/18 12:00

Matrix: Water

Date Received: 12/20/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	184	*	25 - 150	01/02/19 13:45	01/08/19 11:29	1
M2-8:2 FTS	120		25 - 150	01/02/19 13:45	01/08/19 11:29	1
13C3 PFBS	77		50 - 150	01/02/19 13:45	01/08/19 11:29	1

Client Sample ID: MW-10-121918

Lab Sample ID: 480-147040-4

Date Collected: 12/19/18 13:50

Matrix: Water

Date Received: 12/20/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.21		0.20	0.10	ug/L		12/23/18 16:27	12/27/18 16:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	31		15 - 110	12/23/18 16:27	12/27/18 16:41	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	6.1		1.7	0.36	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluoropentanoic acid (PFPeA)	11		1.7	0.65	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorohexanoic acid (PFHxA)	3.3		1.7	0.21	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluoroheptanoic acid (PFHpA)	1.9		1.7	0.28	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorooctanoic acid (PFOA)	3.2	B	1.7	0.28	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorononanoic acid (PFNA)	0.44	J	1.7	0.33	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorodecanoic acid (PFDA)	0.49	J	1.7	0.33	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluoroundecanoic acid (PFUnA)	0.39	J B	1.7	0.22	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorododecanoic acid (PFDoA)	0.32	J	1.7	0.30	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorotridecanoic acid (PFTriA)	0.27	J	1.7	0.21	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.39	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorobutanesulfonic acid (PFBS)	3.5		1.7	0.38	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.23	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.71	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorooctanesulfonic acid (PFOS)	5.1		1.7	0.66	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.46	ng/L		01/02/19 13:45	01/08/19 12:17	1
Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.49	ng/L		01/02/19 13:45	01/08/19 12:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.39	ng/L		01/02/19 13:45	01/08/19 12:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.61	ng/L		01/02/19 13:45	01/08/19 12:17	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	0.87	ng/L		01/02/19 13:45	01/08/19 12:17	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.49	ng/L		01/02/19 13:45	01/08/19 12:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	96		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C4 PFHpA	58		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C4 PFOA	78		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C4 PFOS	105		50 - 150	01/02/19 13:45	01/08/19 12:17	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: MW-10-121918

Lab Sample ID: 480-147040-4

Date Collected: 12/19/18 13:50

Matrix: Water

Date Received: 12/20/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	84		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C4 PFBA	25		25 - 150	01/02/19 13:45	01/08/19 12:17	1
13C2 PFHxA	35 *		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C2 PFDA	98		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C2 PFUnA	107		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C2 PFDoA	98		50 - 150	01/02/19 13:45	01/08/19 12:17	1
13C8 FOSA	73		25 - 150	01/02/19 13:45	01/08/19 12:17	1
13C5 PFPeA	32		25 - 150	01/02/19 13:45	01/08/19 12:17	1
13C2 PFTeDA	102		50 - 150	01/02/19 13:45	01/08/19 12:17	1
d3-NMeFOSAA	66		50 - 150	01/02/19 13:45	01/08/19 12:17	1
d5-NEtFOSAA	98		50 - 150	01/02/19 13:45	01/08/19 12:17	1
M2-6:2 FTS	251 *		25 - 150	01/02/19 13:45	01/08/19 12:17	1
M2-8:2 FTS	211 *		25 - 150	01/02/19 13:45	01/08/19 12:17	1
13C3 PFBS	68		50 - 150	01/02/19 13:45	01/08/19 12:17	1

Client Sample ID: MW-01R-121918

Lab Sample ID: 480-147040-5

Date Collected: 12/19/18 14:10

Matrix: Water

Date Received: 12/20/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		12/23/18 16:27	12/27/18 17:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110	12/23/18 16:27	12/27/18 17:05	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	10		1.6	0.34	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluoropentanoic acid (PFPeA)	11		1.6	0.61	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorohexanoic acid (PFHxA)	11		1.6	0.20	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluoroheptanoic acid (PFHpA)	3.1		1.6	0.26	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorooctanoic acid (PFOA)	5.6 B		1.6	0.26	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorononanoic acid (PFNA)	ND		1.6	0.31	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorodecanoic acid (PFDA)	ND		1.6	0.31	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluoroundecanoic acid (PFUnA)	0.29 J B		1.6	0.20	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorododecanoic acid (PFDoA)	ND		1.6	0.29	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.6	0.20	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.6	0.37	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorobutanesulfonic acid (PFBS)	1.8		1.6	0.36	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorohexanesulfonic acid (PFHxS)	0.49 J		1.6	0.21	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.6	0.67	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorooctanesulfonic acid (PFOS)	2.6		1.6	0.62	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.6	0.43	ng/L		01/02/19 13:45	01/08/19 12:33	1
Perfluorooctanesulfonamide (PFOSA)	ND		1.6	0.46	ng/L		01/02/19 13:45	01/08/19 12:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		16	0.37	ng/L		01/02/19 13:45	01/08/19 12:33	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: MW-01R-121918

Lab Sample ID: 480-147040-5

Date Collected: 12/19/18 14:10

Matrix: Water

Date Received: 12/20/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	ND		16	0.57	ng/L		01/02/19 13:45	01/08/19 12:33	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		16	0.82	ng/L		01/02/19 13:45	01/08/19 12:33	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		16	0.46	ng/L		01/02/19 13:45	01/08/19 12:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	102		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C4 PFHpA	66		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C4 PFOA	70		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C4 PFOS	94		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C5 PFNA	76		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C4 PFBA	78		25 - 150				01/02/19 13:45	01/08/19 12:33	1
13C2 PFHxA	60		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C2 PFDA	72		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C2 PFUnA	73		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C2 PFDoA	64		50 - 150				01/02/19 13:45	01/08/19 12:33	1
13C8 FOSA	63		25 - 150				01/02/19 13:45	01/08/19 12:33	1
13C5 PFPeA	70		25 - 150				01/02/19 13:45	01/08/19 12:33	1
13C2 PFTeDA	64		50 - 150				01/02/19 13:45	01/08/19 12:33	1
d3-NMeFOSAA	53		50 - 150				01/02/19 13:45	01/08/19 12:33	1
d5-NEtFOSAA	62		50 - 150				01/02/19 13:45	01/08/19 12:33	1
M2-6:2 FTS	142		25 - 150				01/02/19 13:45	01/08/19 12:33	1
M2-8:2 FTS	95		25 - 150				01/02/19 13:45	01/08/19 12:33	1
13C3 PFBS	94		50 - 150				01/02/19 13:45	01/08/19 12:33	1

Client Sample ID: FD-01-121918

Lab Sample ID: 480-147040-6

Date Collected: 12/19/18 00:00

Matrix: Water

Date Received: 12/20/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20		0.20	0.10	ug/L		12/23/18 16:27	12/27/18 17:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				12/23/18 16:27	12/27/18 17:30	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	7.0		1.7	0.36	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluoropentanoic acid (PFPeA)	9.2		1.7	0.65	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorohexanoic acid (PFHxA)	3.0		1.7	0.21	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluoroheptanoic acid (PFHpA)	1.6	J	1.7	0.28	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorooctanoic acid (PFOA)	5.1	B	1.7	0.28	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorononanoic acid (PFNA)	0.52	J	1.7	0.33	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.33	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.22	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.30	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.21	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.39	ng/L		01/02/19 13:45	01/08/19 12:49	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: FD-01-121918

Lab Sample ID: 480-147040-6

Date Collected: 12/19/18 00:00

Matrix: Water

Date Received: 12/20/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	3.5		1.7	0.38	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorohexanesulfonic acid (PFHxS)	0.34	J	1.7	0.23	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.71	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorooctanesulfonic acid (PFOS)	5.2		1.7	0.66	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.46	ng/L		01/02/19 13:45	01/08/19 12:49	1
Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.49	ng/L		01/02/19 13:45	01/08/19 12:49	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.39	ng/L		01/02/19 13:45	01/08/19 12:49	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.61	ng/L		01/02/19 13:45	01/08/19 12:49	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	0.87	ng/L		01/02/19 13:45	01/08/19 12:49	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.49	ng/L		01/02/19 13:45	01/08/19 12:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
18O2 PFHxS	105		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C4 PFHpA	60		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C4 PFOA	77		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C4 PFOS	115		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C5 PFNA	86		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C4 PFBA	32		25 - 150				01/02/19 13:45	01/08/19 12:49	1
13C2 PFHxA	39	*	50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C2 PFDA	105		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C2 PFUnA	107		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C2 PFDoA	100		50 - 150				01/02/19 13:45	01/08/19 12:49	1
13C8 FOSA	84		25 - 150				01/02/19 13:45	01/08/19 12:49	1
13C5 PFPeA	33		25 - 150				01/02/19 13:45	01/08/19 12:49	1
13C2 PFTeDA	105		50 - 150				01/02/19 13:45	01/08/19 12:49	1
d3-NMeFOSAA	82		50 - 150				01/02/19 13:45	01/08/19 12:49	1
d5-NEtFOSAA	96		50 - 150				01/02/19 13:45	01/08/19 12:49	1
M2-6:2 FTS	278	*	25 - 150				01/02/19 13:45	01/08/19 12:49	1
M2-8:2 FTS	218	*	25 - 150				01/02/19 13:45	01/08/19 12:49	1
13C3 PFBS	72		50 - 150				01/02/19 13:45	01/08/19 12:49	1

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-110)
480-147040-3	MW-09-121918	29
480-147040-3 MS	MW-09-121918	31
480-147040-3 MSD	MW-09-121918	28
480-147040-4	MW-10-121918	31
480-147040-5	MW-01R-121918	32
480-147040-6	FD-01-121918	32
LCS 480-452286/2-A	Lab Control Sample	34
MB 480-452286/1-A	Method Blank	35

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFHxS (50-150)	PFHpA (50-150)	PFOA (50-150)	PFOS (50-150)	PFNA (50-150)	PFBA (25-150)	PFHxA (50-150)	PFDA (50-150)
480-147040-1	FB-01-121918	99	81	84	93	79	80	88	85
480-147040-2	EB-01-121918	95	82	84	95	84	74	84	84
480-147040-3	MW-09-121918	88	62	85	103	86	57	45 *	93
480-147040-3 MS	MW-09-121918	82	62	79	94	85	58	44 *	91
480-147040-3 MSD	MW-09-121918	91	61	78	101	86	57	44 *	88
480-147040-4	MW-10-121918	96	58	78	105	84	25	35 *	98
480-147040-5	MW-01R-121918	102	66	70	94	76	78	60	72
480-147040-6	FD-01-121918	105	60	77	115	86	32	39 *	105
MB 200-138726/1-A	Method Blank	105	78	80	102	80	73	84	84

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFUnA (50-150)	PFDoA (50-150)	PFOSA (25-150)	PFPeA (25-150)	PFTDA (50-150)	-NMeFOS (50-150)	-NEtFOS/ (50-150)	M262FTS (25-150)
480-147040-1	FB-01-121918	80	67	50	100	53	63	71	119
480-147040-2	EB-01-121918	79	64	50	95	59	63	69	125
480-147040-3	MW-09-121918	94	84	64	52	76	62	78	184 *
480-147040-3 MS	MW-09-121918	91	85	60	50	79	71	81	204 *
480-147040-3 MSD	MW-09-121918	86	78	60	58	69	58	73	196 *
480-147040-4	MW-10-121918	107	98	73	32	102	66	98	251 *
480-147040-5	MW-01R-121918	73	64	63	70	64	53	62	142
480-147040-6	FD-01-121918	107	100	84	33	105	82	96	278 *
MB 200-138726/1-A	Method Blank	80	69	64	103	60	59	72	146

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M282FTS (25-150)	3C3-PFB: (50-150)
480-147040-1	FB-01-121918	86	101
480-147040-2	EB-01-121918	88	81
480-147040-3	MW-09-121918	120	77
480-147040-3 MS	MW-09-121918	125	71
480-147040-3 MSD	MW-09-121918	117	72
480-147040-4	MW-10-121918	211 *	68
480-147040-5	MW-01R-121918	95	94

TestAmerica Buffalo

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		M282FTS (25-150)	3C3-PFB: (50-150)
480-147040-6	FD-01-121918	218 *	72
MB 200-138726/1-A	Method Blank	87	105

Surrogate Legend

- PFHxS = 18O2 PFHxS
- PFHpA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFOS = 13C4 PFOS
- PFNA = 13C5 PFNA
- PFBA = 13C4 PFBA
- PFHxA = 13C2 PFHxA
- PFDA = 13C2 PFDA
- PfUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFOSA = 13C8 FOSA
- PFPeA = 13C5 PFPeA
- PFTDA = 13C2 PFTeDA
- d3-NMeFOSAA = d3-NMeFOSAA
- d5-NEtFOSAA = d5-NEtFOSAA
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS
- 13C3-PFBS = 13C3 PFBS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFHxS (25-150)	PFHpA (25-150)	PFOA (25-150)	PFOS (25-150)	PFNA (25-150)	PFBA (25-150)	PFHxA (25-150)	PFDA (25-150)
LCS 200-138726/2-A	Lab Control Sample	105	78	84	113	86	81	88	90

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)							M262FTS (25-150)
		PFUnA (25-150)	PFDoA (25-150)	PFOSA (25-150)	PFPeA (25-150)	PFTDA (25-150)	-NMeFOS/ (25-150)	-NEtFOS/ (25-150)	
LCS 200-138726/2-A	Lab Control Sample	86	73	89	117	59	71	78	145

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		M282FTS (25-150)	3C3-PFB: (25-150)
LCS 200-138726/2-A	Lab Control Sample	95	119

Surrogate Legend

- PFHxS = 18O2 PFHxS
- PFHpA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFOS = 13C4 PFOS
- PFNA = 13C5 PFNA
- PFBA = 13C4 PFBA
- PFHxA = 13C2 PFHxA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

PFD_oA = ¹³C₂ PFD_oA
PFOSA = ¹³C₈ FOSA
PFPeA = ¹³C₅ PFPeA
PFTDA = ¹³C₂ PFTeDA
d₃-NMeFOSAA = d₃-NMeFOSAA
d₅-NEtFOSAA = d₅-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
¹³C₃-PFBS = ¹³C₃ PFBS

QC Sample Results

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-452286/1-A
Matrix: Water
Analysis Batch: 452523

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452286

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		12/23/18 16:27	12/27/18 07:43	1
Isotope Dilution	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	35		15 - 110				12/23/18 16:27	12/27/18 07:43	1

Lab Sample ID: LCS 480-452286/2-A
Matrix: Water
Analysis Batch: 452523

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452286

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	1.00	1.13		ug/L		113	40 - 140
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	34		15 - 110				

Lab Sample ID: 480-147040-3 MS
Matrix: Water
Analysis Batch: 452523

Client Sample ID: MW-09-121918
Prep Type: Total/NA
Prep Batch: 452286

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	0.47		1.00	1.52	E	ug/L		105	40 - 140
Isotope Dilution	%Recovery	MS Qualifier	Limits						
1,4-Dioxane-d8	31		15 - 110						

Lab Sample ID: 480-147040-3 MSD
Matrix: Water
Analysis Batch: 452523

Client Sample ID: MW-09-121918
Prep Type: Total/NA
Prep Batch: 452286

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	0.47		1.00	1.47	E	ug/L		100	40 - 140	4	20
Isotope Dilution	%Recovery	MSD Qualifier	Limits								
1,4-Dioxane-d8	28		15 - 110								

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 200-138726/1-A
Matrix: Water
Analysis Batch: 138864

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138726

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.41	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.75	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.24	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.32	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorooctanoic acid (PFOA)	0.333	J	2.0	0.32	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.38	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.38	ng/L		01/02/19 13:45	01/08/19 08:02	1

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 200-138726/1-A
Matrix: Water
Analysis Batch: 138864

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138726

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluoroundecanoic acid (PFUnA)	0.408	J	2.0	0.25	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.35	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.24	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.45	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.44	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.26	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.82	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.76	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.53	ng/L		01/02/19 13:45	01/08/19 08:02	1
Perfluorooctanesulfonamide (PFOSA)	ND		2.0	0.56	ng/L		01/02/19 13:45	01/08/19 08:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	0.45	ng/L		01/02/19 13:45	01/08/19 08:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	0.70	ng/L		01/02/19 13:45	01/08/19 08:02	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	1.0	ng/L		01/02/19 13:45	01/08/19 08:02	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	0.56	ng/L		01/02/19 13:45	01/08/19 08:02	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
18O2 PFHxS	105		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C4 PFHpA	78		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C4 PFOA	80		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C4 PFOS	102		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C5 PFNA	80		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C4 PFBA	73		25 - 150	01/02/19 13:45	01/08/19 08:02	1
13C2 PFHxA	84		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C2 PFDA	84		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C2 PFUnA	80		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C2 PFDoA	69		50 - 150	01/02/19 13:45	01/08/19 08:02	1
13C8 FOSA	64		25 - 150	01/02/19 13:45	01/08/19 08:02	1
13C5 PFPeA	103		25 - 150	01/02/19 13:45	01/08/19 08:02	1
13C2 PFTeDA	60		50 - 150	01/02/19 13:45	01/08/19 08:02	1
d3-NMeFOSAA	59		50 - 150	01/02/19 13:45	01/08/19 08:02	1
d5-NEtFOSAA	72		50 - 150	01/02/19 13:45	01/08/19 08:02	1
M2-6:2 FTS	146		25 - 150	01/02/19 13:45	01/08/19 08:02	1
M2-8:2 FTS	87		25 - 150	01/02/19 13:45	01/08/19 08:02	1
13C3 PFBS	105		50 - 150	01/02/19 13:45	01/08/19 08:02	1

Lab Sample ID: LCS 200-138726/2-A
Matrix: Water
Analysis Batch: 138864

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138726

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA)	40.0	29.2		ng/L		73	50 - 150
Perfluorohexanoic acid (PFHxA)	40.0	37.2		ng/L		93	50 - 150
Perfluoroheptanoic acid (PFHpA)	40.0	44.5		ng/L		111	50 - 150
Perfluorooctanoic acid (PFOA)	40.0	40.9		ng/L		102	50 - 150

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 200-138726/2-A

Matrix: Water

Analysis Batch: 138864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 138726

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorononanoic acid (PFNA)	40.0	33.5		ng/L		84	50 - 150
Perfluorodecanoic acid (PFDA)	40.0	37.2		ng/L		93	50 - 150
Perfluoroundecanoic acid (PFUnA)	40.0	41.4		ng/L		104	50 - 150
Perfluorododecanoic acid (PFDoA)	40.0	43.4		ng/L		109	50 - 150
Perfluorotridecanoic acid (PFTriA)	40.0	47.5		ng/L		119	50 - 150
Perfluorotetradecanoic acid (PFTeA)	40.0	39.1		ng/L		98	50 - 150
Perfluorobutanesulfonic acid (PFBS)	35.4	26.6		ng/L		75	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	36.4	27.1		ng/L		74	50 - 150
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	34.6		ng/L		91	50 - 150
Perfluorooctanesulfonic acid (PFOS)	37.1	37.9		ng/L		102	50 - 150
Perfluorodecanesulfonic acid (PFDS)	38.6	36.6		ng/L		95	50 - 150
Perfluorooctanesulfonamide (PFOSA)	40.0	41.1		ng/L		103	50 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	28.7		ng/L		72	50 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	32.5		ng/L		81	50 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.9	40.0		ng/L		106	50 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	38.3	42.3		ng/L		110	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
18O2 PFHxS	105		25 - 150
13C4 PFHpA	78		25 - 150
13C4 PFOA	84		25 - 150
13C4 PFOS	113		25 - 150
13C5 PFNA	86		25 - 150
13C4 PFBA	81		25 - 150
13C2 PFHxA	88		25 - 150
13C2 PFDA	90		25 - 150
13C2 PFUnA	86		25 - 150
13C2 PFDoA	73		25 - 150
13C8 FOSA	89		25 - 150
13C5 PFPeA	117		25 - 150
13C2 PFTeDA	59		25 - 150
d3-NMeFOSAA	71		25 - 150
d5-NEtFOSAA	78		25 - 150
M2-6:2 FTS	145		25 - 150
M2-8:2 FTS	95		25 - 150
13C3 PFBS	119		25 - 150

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-147040-3 MS

Matrix: Water

Analysis Batch: 138864

Client Sample ID: MW-09-121918

Prep Type: Total/NA

Prep Batch: 138726

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorobutanoic acid (PFBA)	8.4		36.8	41.5		ng/L		90	40 - 160
Perfluoropentanoic acid (PFPeA)	12		36.8	43.5		ng/L		86	40 - 160
Perfluorohexanoic acid (PFHxA)	9.7		36.8	41.9		ng/L		88	40 - 160
Perfluoroheptanoic acid (PFHpA)	2.9		36.8	41.5		ng/L		105	40 - 160
Perfluorooctanoic acid (PFOA)	5.8	B	36.8	38.4		ng/L		88	40 - 160
Perfluorononanoic acid (PFNA)	0.57	J	36.8	30.3		ng/L		81	40 - 160
Perfluorodecanoic acid (PFDA)	ND		36.8	33.5		ng/L		91	40 - 160
Perfluoroundecanoic acid (PFUnA)	ND		36.8	35.8		ng/L		97	40 - 160
Perfluorododecanoic acid (PFDoA)	ND		36.8	36.5		ng/L		99	40 - 160
Perfluorotridecanoic acid (PFTriA)	ND		36.8	35.9		ng/L		97	40 - 160
Perfluorotetradecanoic acid (PFTeA)	ND		36.8	30.7		ng/L		83	40 - 160
Perfluorobutanesulfonic acid (PFBS)	1.6	J	32.5	30.4		ng/L		89	40 - 160
Perfluorohexanesulfonic acid (PFHxS)	0.28	J	33.5	27.5		ng/L		81	40 - 160
Perfluoroheptanesulfonic Acid (PFHpS)	ND		35.0	33.6		ng/L		96	40 - 160
Perfluorooctanesulfonic acid (PFOS)	2.3		34.1	37.8		ng/L		104	40 - 160
Perfluorodecanesulfonic acid (PFDS)	ND		35.5	35.1		ng/L		99	40 - 160
Perfluorooctanesulfonamide (PFOSA)	ND		36.8	34.2		ng/L		93	40 - 160
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		36.8	23.4		ng/L		64	40 - 160
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		36.8	26.9		ng/L		73	40 - 160
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	4.3	J	34.9	37.3		ng/L		95	40 - 160
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		35.2	33.6		ng/L		95	40 - 160

Isotope Dilution	MS	MS	Limits
	%Recovery	Qualifier	
18O2 PFHxS	82		50 - 150
13C4 PFHpA	62		50 - 150
13C4 PFOA	79		50 - 150
13C4 PFOS	94		50 - 150
13C5 PFNA	85		50 - 150
13C4 PFBA	58		25 - 150
13C2 PFHxA	44	*	50 - 150
13C2 PFDA	91		50 - 150
13C2 PFUnA	91		50 - 150
13C2 PFDoA	85		50 - 150
13C8 FOSA	60		25 - 150
13C5 PFPeA	50		25 - 150
13C2 PFTeA	79		50 - 150
d3-NMeFOSAA	71		50 - 150

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-147040-3 MS

Matrix: Water

Analysis Batch: 138864

Client Sample ID: MW-09-121918

Prep Type: Total/NA

Prep Batch: 138726

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
d5-NEtFOSAA	81		50 - 150
M2-6:2 FTS	204	*	25 - 150
M2-8:2 FTS	125		25 - 150
13C3 PFBS	71		50 - 150

Lab Sample ID: 480-147040-3 MSD

Matrix: Water

Analysis Batch: 138864

Client Sample ID: MW-09-121918

Prep Type: Total/NA

Prep Batch: 138726

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Perfluorobutanoic acid (PFBA)	8.4		33.5	40.8		ng/L		97	40 - 160	2	30
Perfluoropentanoic acid (PFPeA)	12		33.5	39.0		ng/L		80	40 - 160	11	30
Perfluorohexanoic acid (PFHxA)	9.7		33.5	43.0		ng/L		100	40 - 160	3	30
Perfluoroheptanoic acid (PFHpA)	2.9		33.5	41.7		ng/L		116	40 - 160	1	30
Perfluorooctanoic acid (PFOA)	5.8	B	33.5	40.6		ng/L		104	40 - 160	6	30
Perfluorononanoic acid (PFNA)	0.57	J	33.5	30.3		ng/L		89	40 - 160	0	30
Perfluorodecanoic acid (PFDA)	ND		33.5	33.3		ng/L		99	40 - 160	1	30
Perfluoroundecanoic acid (PFUnA)	ND		33.5	35.4		ng/L		106	40 - 160	1	30
Perfluorododecanoic acid (PFDoA)	ND		33.5	36.3		ng/L		109	40 - 160	0	30
Perfluorotridecanoic acid (PFTriA)	ND		33.5	33.8		ng/L		101	40 - 160	6	30
Perfluorotetradecanoic acid (PFTeA)	ND		33.5	30.6		ng/L		91	40 - 160	0	30
Perfluorobutanesulfonic acid (PFBS)	1.6	J	29.6	26.9		ng/L		85	40 - 160	12	30
Perfluorohexanesulfonic acid (PFHxS)	0.28	J	30.5	25.6		ng/L		83	40 - 160	7	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND		31.9	30.2		ng/L		95	40 - 160	11	30
Perfluorooctanesulfonic acid (PFOS)	2.3		31.1	33.7		ng/L		101	40 - 160	12	30
Perfluorodecanesulfonic acid (PFDS)	ND		32.3	30.1		ng/L		93	40 - 160	16	30
Perfluorooctanesulfonamide (PFOSA)	ND		33.5	35.0		ng/L		104	40 - 160	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		33.5	27.1		ng/L		81	40 - 160	15	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		33.5	28.1		ng/L		84	40 - 160	5	30
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	4.3	J	31.7	37.9		ng/L		106	40 - 160	2	30
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		32.1	34.6		ng/L		108	40 - 160	3	30

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
18O2 PFHxS	91		50 - 150
13C4 PFHpA	61		50 - 150
13C4 PFOA	78		50 - 150
13C4 PFOS	101		50 - 150
13C5 PFNA	86		50 - 150

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-147040-3 MSD

Matrix: Water

Analysis Batch: 138864

Client Sample ID: MW-09-121918

Prep Type: Total/NA

Prep Batch: 138726

<i>Isotope Dilution</i>	<i>MSD MSD</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>13C4 PFBA</i>	57		25 - 150
<i>13C2 PFHxA</i>	44	*	50 - 150
<i>13C2 PFDA</i>	88		50 - 150
<i>13C2 PFUnA</i>	86		50 - 150
<i>13C2 PFDoA</i>	78		50 - 150
<i>13C8 FOSA</i>	60		25 - 150
<i>13C5 PFPeA</i>	58		25 - 150
<i>13C2 PFTeDA</i>	69		50 - 150
<i>d3-NMeFOSAA</i>	58		50 - 150
<i>d5-NEtFOSAA</i>	73		50 - 150
<i>M2-6:2 FTS</i>	196	*	25 - 150
<i>M2-8:2 FTS</i>	117		25 - 150
<i>13C3 PFBS</i>	72		50 - 150

Definitions/Glossary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	Isotope Dilution analyte is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

GC/MS Semi VOA

Prep Batch: 452286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-147040-3	MW-09-121918	Total/NA	Water	3510C	
480-147040-4	MW-10-121918	Total/NA	Water	3510C	
480-147040-5	MW-01R-121918	Total/NA	Water	3510C	
480-147040-6	FD-01-121918	Total/NA	Water	3510C	
MB 480-452286/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-452286/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-147040-3 MS	MW-09-121918	Total/NA	Water	3510C	
480-147040-3 MSD	MW-09-121918	Total/NA	Water	3510C	

Analysis Batch: 452523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-147040-3	MW-09-121918	Total/NA	Water	8270D SIM ID	452286
MB 480-452286/1-A	Method Blank	Total/NA	Water	8270D SIM ID	452286
LCS 480-452286/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	452286
480-147040-3 MS	MW-09-121918	Total/NA	Water	8270D SIM ID	452286
480-147040-3 MSD	MW-09-121918	Total/NA	Water	8270D SIM ID	452286

Analysis Batch: 452764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-147040-4	MW-10-121918	Total/NA	Water	8270D SIM ID	452286
480-147040-5	MW-01R-121918	Total/NA	Water	8270D SIM ID	452286
480-147040-6	FD-01-121918	Total/NA	Water	8270D SIM ID	452286

LCMS

Prep Batch: 138726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-147040-1	FB-01-121918	Total/NA	Water	3535	
480-147040-2	EB-01-121918	Total/NA	Water	3535	
480-147040-3	MW-09-121918	Total/NA	Water	3535	
480-147040-4	MW-10-121918	Total/NA	Water	3535	
480-147040-5	MW-01R-121918	Total/NA	Water	3535	
480-147040-6	FD-01-121918	Total/NA	Water	3535	
MB 200-138726/1-A	Method Blank	Total/NA	Water	3535	
LCS 200-138726/2-A	Lab Control Sample	Total/NA	Water	3535	
480-147040-3 MS	MW-09-121918	Total/NA	Water	3535	
480-147040-3 MSD	MW-09-121918	Total/NA	Water	3535	

Analysis Batch: 138864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-147040-1	FB-01-121918	Total/NA	Water	537 (modified)	138726
480-147040-2	EB-01-121918	Total/NA	Water	537 (modified)	138726
480-147040-3	MW-09-121918	Total/NA	Water	537 (modified)	138726
480-147040-4	MW-10-121918	Total/NA	Water	537 (modified)	138726
480-147040-5	MW-01R-121918	Total/NA	Water	537 (modified)	138726
480-147040-6	FD-01-121918	Total/NA	Water	537 (modified)	138726
MB 200-138726/1-A	Method Blank	Total/NA	Water	537 (modified)	138726
LCS 200-138726/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	138726
480-147040-3 MS	MW-09-121918	Total/NA	Water	537 (modified)	138726
480-147040-3 MSD	MW-09-121918	Total/NA	Water	537 (modified)	138726

TestAmerica Buffalo

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: FB-01-121918

Date Collected: 12/19/18 10:25

Date Received: 12/20/18 01:00

Lab Sample ID: 480-147040-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			138726	01/02/19 13:45	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	138864	01/08/19 10:41	BWC	TAL BUR

Client Sample ID: EB-01-121918

Date Collected: 12/19/18 10:35

Date Received: 12/20/18 01:00

Lab Sample ID: 480-147040-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			138726	01/02/19 13:45	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	138864	01/08/19 10:57	BWC	TAL BUR

Client Sample ID: MW-09-121918

Date Collected: 12/19/18 12:00

Date Received: 12/20/18 01:00

Lab Sample ID: 480-147040-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			452286	12/23/18 16:27	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	452523	12/27/18 10:07	DMR	TAL BUF
Total/NA	Prep	3535			138726	01/02/19 13:45	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	138864	01/08/19 11:29	BWC	TAL BUR

Client Sample ID: MW-10-121918

Date Collected: 12/19/18 13:50

Date Received: 12/20/18 01:00

Lab Sample ID: 480-147040-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			452286	12/23/18 16:27	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	452764	12/27/18 16:41	DMR	TAL BUF
Total/NA	Prep	3535			138726	01/02/19 13:45	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	138864	01/08/19 12:17	BWC	TAL BUR

Client Sample ID: MW-01R-121918

Date Collected: 12/19/18 14:10

Date Received: 12/20/18 01:00

Lab Sample ID: 480-147040-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			452286	12/23/18 16:27	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	452764	12/27/18 17:05	DMR	TAL BUF
Total/NA	Prep	3535			138726	01/02/19 13:45	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	138864	01/08/19 12:33	BWC	TAL BUR

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Client Sample ID: FD-01-121918

Lab Sample ID: 480-147040-6

Date Collected: 12/19/18 00:00

Matrix: Water

Date Received: 12/20/18 01:00

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	3510C			452286	12/23/18 16:27	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	452764	12/27/18 17:30	DMR	TAL BUF
Total/NA	Prep	3535			138726	01/02/19 13:45	JM1	TAL BUR
Total/NA	Analysis	537 (modified)		1	138864	01/08/19 12:49	BWC	TAL BUR

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America
 Project/Site: Former Ithaca Gun Site

TestAmerica Job ID: 480-147040-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Burlington

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10391	04-01-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (PFOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method 8270D

SIM-ID

Semivolatile Organic Compounds
(GC/MS SIM / Isotope Dilution) by
Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DXE #
MW-09-121918	480-147040-3	29
MW-10-121918	480-147040-4	31
MW-01R-121918	480-147040-5	32
FD-01-121918	480-147040-6	32
	MB 480-452286/1-A	35
	LCS 480-452286/2-A	34
MW-09-121918 MS	480-147040-3 MS	31
MW-09-121918 MSD	480-147040-3 MSD	28

DXE = 1,4-Dioxane-d8

QC LIMITS
15-110

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: U3314410.D

Lab ID: LCS 480-452286/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.13	113	40-140	
1,4-Dioxane-d8	10.0	3.38	34	15-110	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: U3314411.D
 Lab ID: 480-147040-3 MS Client ID: MW-09-121918 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	0.47	1.52	105	40-140	E
1,4-Dioxane-d8	10.0	2.9	3.11	31	15-110	

Column to be used to flag recovery and RPD values
 FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: U3314412.D

Lab ID: 480-147040-3 MSD Client ID: MW-09-121918 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	1.00	1.47	100	4	20	40-140	E
1,4-Dioxane-d8	10.0	2.78	28			15-110	

Column to be used to flag recovery and RPD values

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Lab File ID: U3314409.D Lab Sample ID: MB 480-452286/1-A
 Matrix: Water Date Extracted: 12/23/2018 16:27
 Instrument ID: HP5973U Date Analyzed: 12/27/2018 07:43
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-452286/2-A	U3314410.D	12/27/2018 08:07
MW-09-121918 MS	480-147040-3 MS	U3314411.D	12/27/2018 08:31
MW-09-121918 MSD	480-147040-3 MSD	U3314412.D	12/27/2018 08:55
MW-09-121918	480-147040-3	U3314415.D	12/27/2018 10:07
MW-10-121918	480-147040-4	U3314430.D	12/27/2018 16:41
MW-01R-121918	480-147040-5	U3314431.D	12/27/2018 17:05
FD-01-121918	480-147040-6	U3314432.D	12/27/2018 17:30

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Lab File ID: U3314029.D DFTPP Injection Date: 12/07/2018
 Instrument ID: HP5973U DFTPP Injection Time: 15:11
 Analysis Batch No.: 449428

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	58.1
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	55.1
70	Less than 2% of mass 69	0.2 (0.4) 1
127	10-80% of Base Peak	59.1
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	6.8
275	10-60% of Base Peak	26.6
365	Greater than 1% of mass 198	3.6
441	present but less than 24% of mass 442	11.8 (15.9) 2
442	Greater than 50% of mass 198	74.5
443	15-24% of mass 442	13.7 (18.4) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-449428/3	U3314030.D	12/07/2018	15:39
	IC 480-449428/4	U3314031.D	12/07/2018	16:04
	ICIS 480-449428/5	U3314032.D	12/07/2018	16:28
	IC 480-449428/6	U3314033.D	12/07/2018	16:52
	IC 480-449428/7	U3314034.D	12/07/2018	17:17
	IC 480-449428/8	U3314035.D	12/07/2018	17:41

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Lab File ID: U3314397.D DFTPP Injection Date: 12/27/2018
 Instrument ID: HP5973U DFTPP Injection Time: 02:51
 Analysis Batch No.: 452523

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	40.1
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	42.2
70	Less than 2% of mass 69	0.2 (0.4) 1
127	10-80% of Base Peak	51.4
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	6.7
275	10-60% of Base Peak	27.9
365	Greater than 1% of mass 198	4.3
441	present but less than 24% of mass 442	14.2 (16.6) 2
442	Greater than 50% of mass 198	85.1
443	15-24% of mass 442	15.9 (18.7) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-452523/3	U3314398.D	12/27/2018	03:20
	MB 480-452286/1-A	U3314409.D	12/27/2018	07:43
	LCS 480-452286/2-A	U3314410.D	12/27/2018	08:07
MW-09-121918 MS	480-147040-3 MS	U3314411.D	12/27/2018	08:31
MW-09-121918 MSD	480-147040-3 MSD	U3314412.D	12/27/2018	08:55
MW-09-121918	480-147040-3	U3314415.D	12/27/2018	10:07

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Lab File ID: U3314428.D DFTPP Injection Date: 12/27/2018
 Instrument ID: HP5973U DFTPP Injection Time: 15:48
 Analysis Batch No.: 452764

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	38.7
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	40.8
70	Less than 2% of mass 69	0.1 (0.2) 1
127	10-80% of Base Peak	50.0
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	6.8
275	10-60% of Base Peak	29.5
365	Greater than 1% of mass 198	4.0
441	present but less than 24% of mass 442	15.7 (17.4) 2
442	Greater than 50% of mass 198	90.2
443	15-24% of mass 442	17.7 (19.6) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-452764/3	U3314429.D	12/27/2018	16:17
MW-10-121918	480-147040-4	U3314430.D	12/27/2018	16:41
MW-01R-121918	480-147040-5	U3314431.D	12/27/2018	17:05
FD-01-121918	480-147040-6	U3314432.D	12/27/2018	17:30

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Sample No.: ICIS 480-449428/5 Date Analyzed: 12/07/2018 16:28
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3314032.D Heated Purge: (Y/N) N
 Calibration ID: 35518

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	358908	5.95				
UPPER LIMIT	717816	6.45				
LOWER LIMIT	179454	5.45				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-452523/3		342724	5.94			
CCVIS 480-452764/3		293530	5.94			

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Sample No.: CCVIS 480-452523/3 Date Analyzed: 12/27/2018 03:20
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm)
 Lab File ID (Standard): U3314398.D Heated Purge: (Y/N) N
 Calibration ID: 35518

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		342724	5.94				
UPPER LIMIT		685448	6.44				
LOWER LIMIT		171362	5.44				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-452286/1-A		318524	5.95				
LCS 480-452286/2-A		313280	5.95				
480-147040-3 MS	MW-09-121918 MS	308867	5.95				
480-147040-3 MSD	MW-09-121918 MSD	324167	5.95				
480-147040-3	MW-09-121918	311071	5.95				

DCBd4 = 1,4-Dichlorobenzene-d4
 DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Sample No.: CCVIS 480-452764/3 Date Analyzed: 12/27/2018 16:17
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3314429.D Heated Purge: (Y/N) N
 Calibration ID: 35518

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	293530	5.94				
UPPER LIMIT	587060	6.44				
LOWER LIMIT	146765	5.44				
LAB SAMPLE ID	CLIENT SAMPLE ID					
480-147040-4	MW-10-121918	298275	5.95			
480-147040-5	MW-01R-121918	294409	5.95			
480-147040-6	FD-01-121918	301963	5.95			

DCBd4 = 1,4-Dichlorobenzene-d4
 DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 Lab Sample ID: 480-147040-3
 Matrix: Water Lab File ID: U3314415.D
 Analysis Method: 8270D SIM ID Date Collected: 12/19/2018 12:00
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 10:07
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452523 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.47		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	29		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314415.D
 Lims ID: 480-147040-D-3-C
 Client ID: MW-09-121918
 Sample Type: Client
 Inject. Date: 27-Dec-2018 10:07:30 ALS Bottle#: 50 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-020
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:27 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 13:38:39

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.827	2.746	0.081	90	107819	2.89	28.9	a
3 1,4-Dioxane	88	2.872	2.790	0.082	89	5381	0.4695		
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.944	0.004	99	311071	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314415.D

Injection Date: 27-Dec-2018 10:07:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-147040-D-3-C

Lab Sample ID: 480-147040-3

Worklist Smp#: 20

Client ID: MW-09-121918

Injection Vol: 1.0 ul

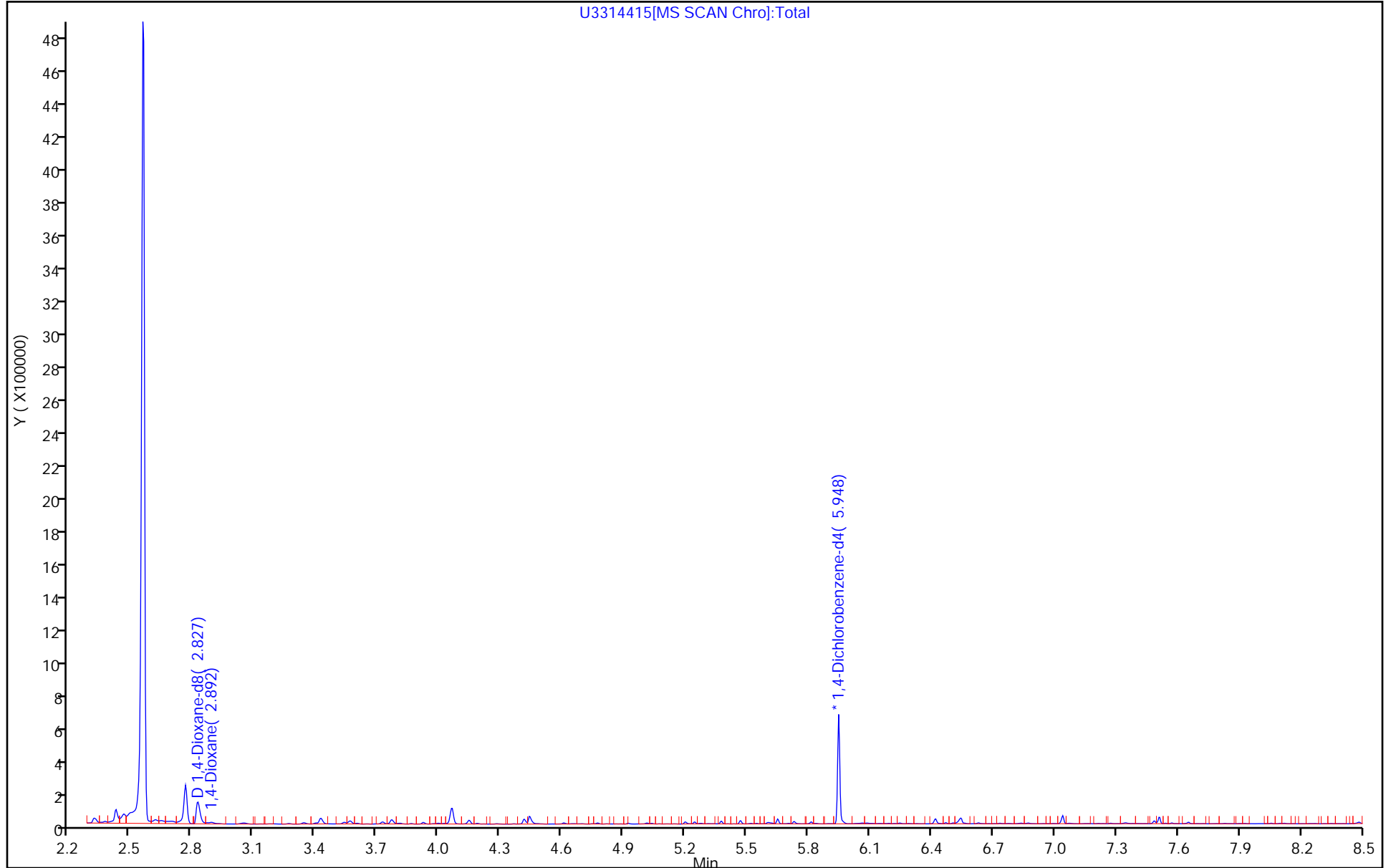
Dil. Factor: 1.0000

ALS Bottle#: 50

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314415[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314415.D

Injection Date: 27-Dec-2018 10:07:30

Instrument ID: HP5973U

Lims ID: 480-147040-D-3-C

Lab Sample ID: 480-147040-3

Client ID: MW-09-121918

Operator ID: DR

ALS Bottle#: 50 Worklist Smp#: 20

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

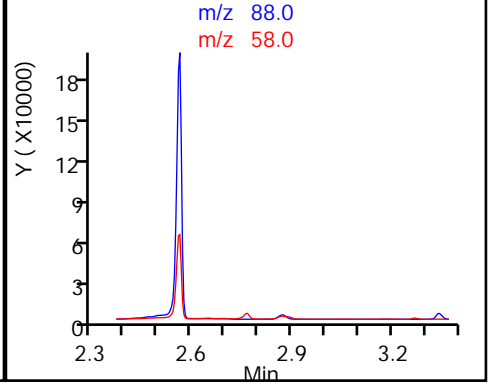
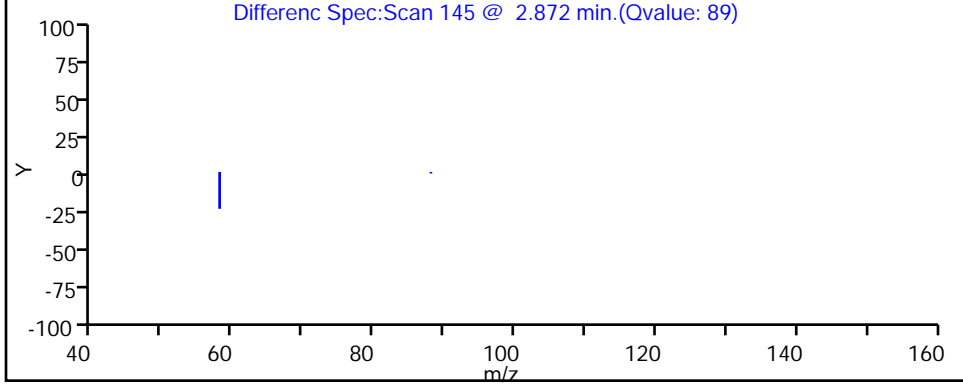
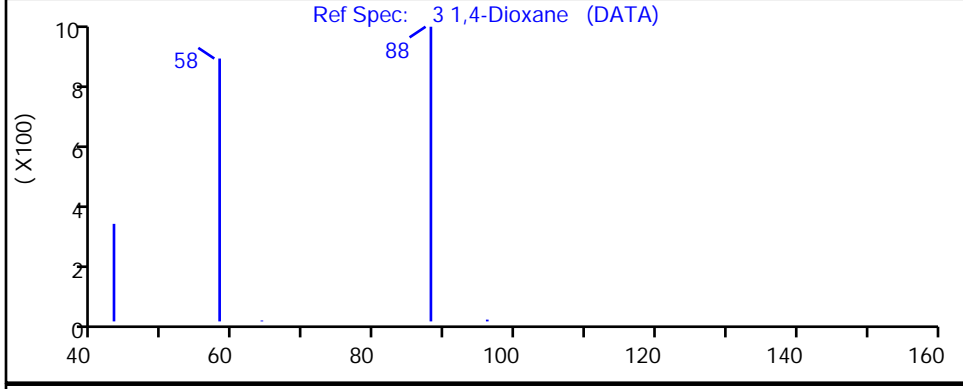
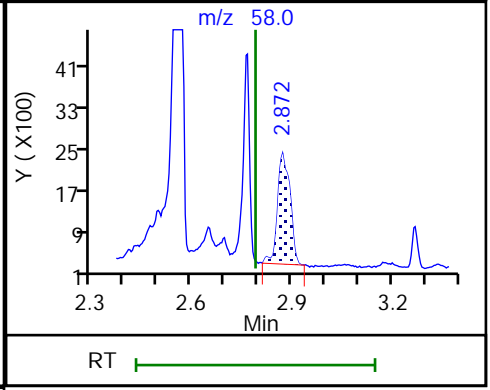
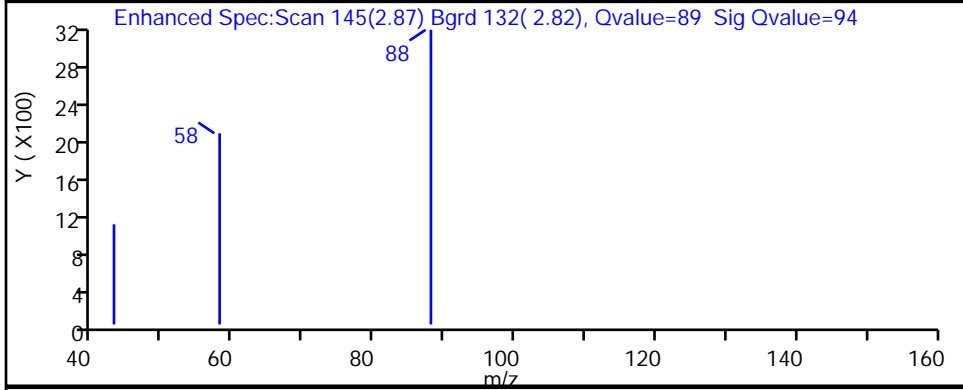
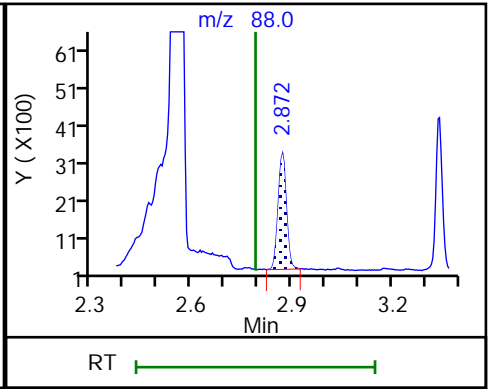
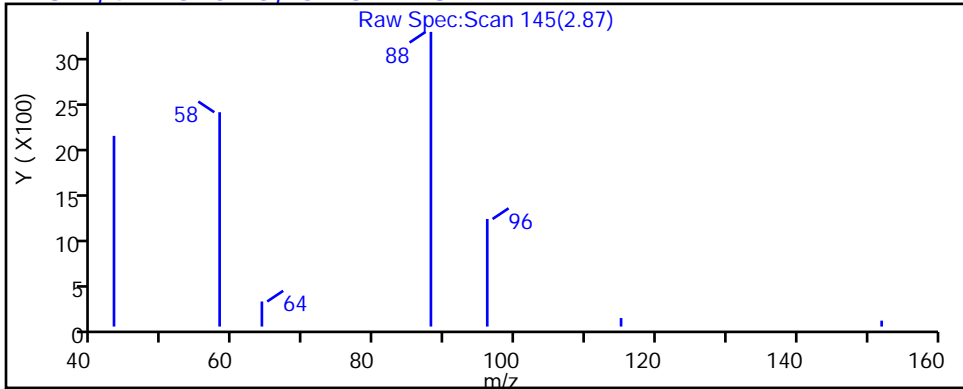
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314415.D

Injection Date: 27-Dec-2018 10:07:30

Instrument ID: HP5973U

Lims ID: 480-147040-D-3-C

Lab Sample ID: 480-147040-3

Client ID: MW-09-121918

Operator ID: DR

ALS Bottle#: 50 Worklist Smp#: 20

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

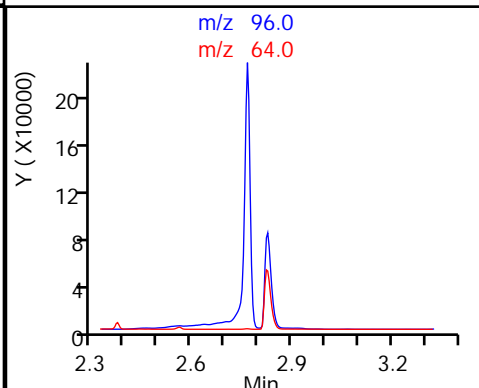
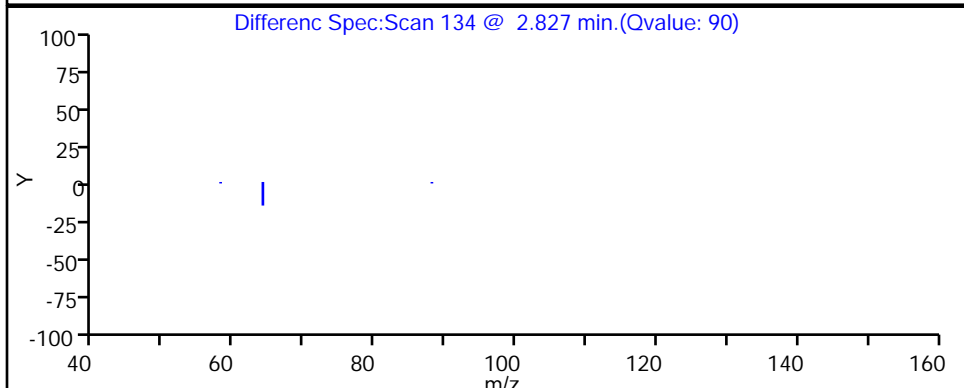
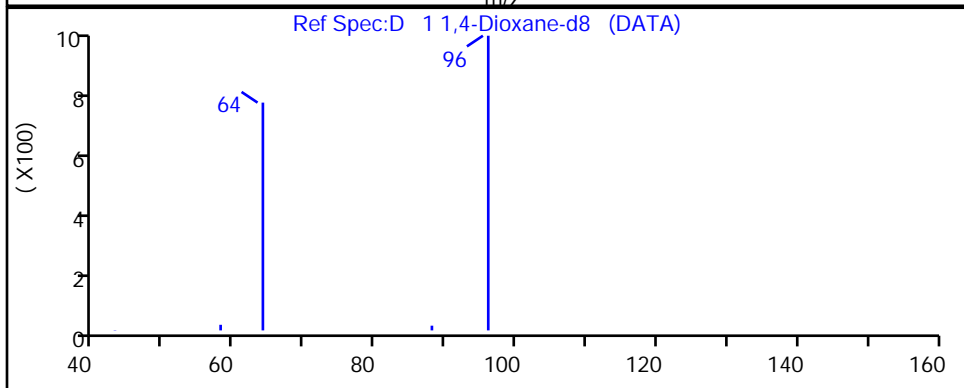
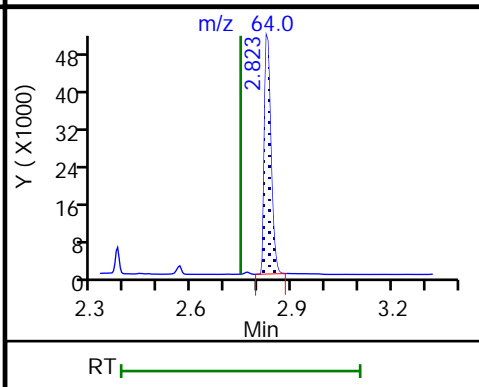
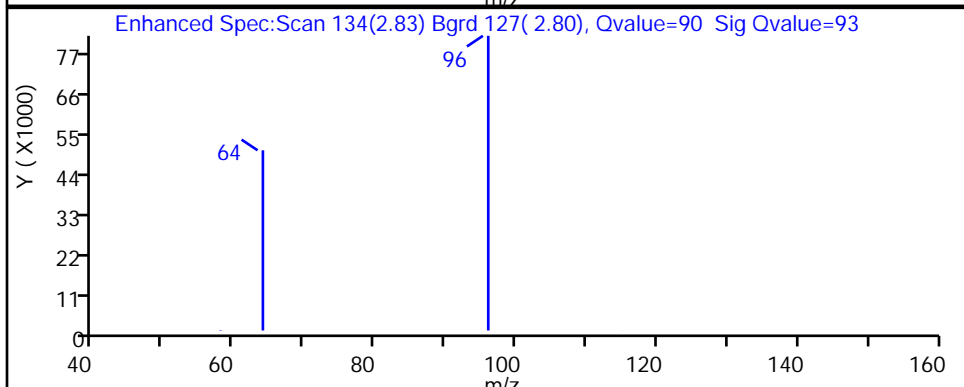
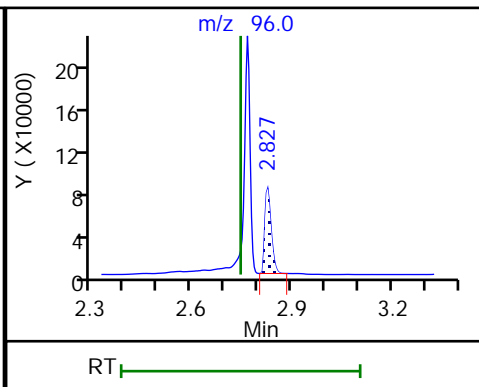
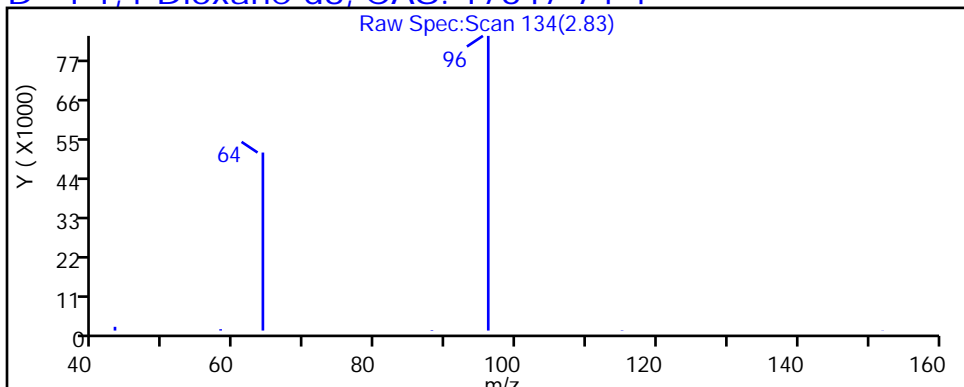
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



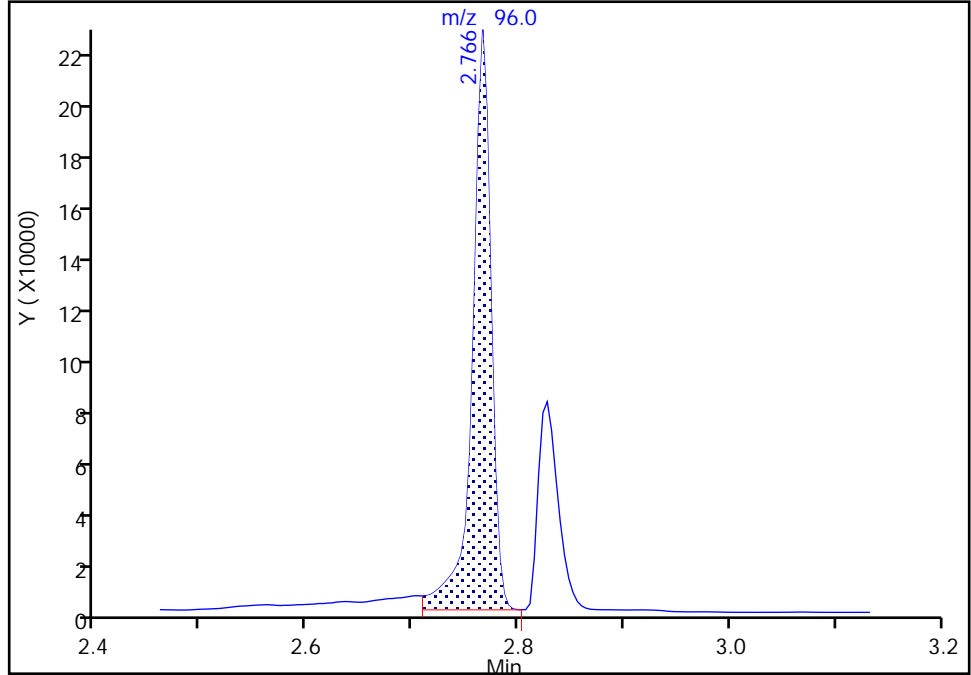
TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314415.D
Injection Date: 27-Dec-2018 10:07:30 Instrument ID: HP5973U
Lims ID: 480-147040-D-3-C Lab Sample ID: 480-147040-3
Client ID: MW-09-121918
Operator ID: DR ALS Bottle#: 50 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4
Signal: 1

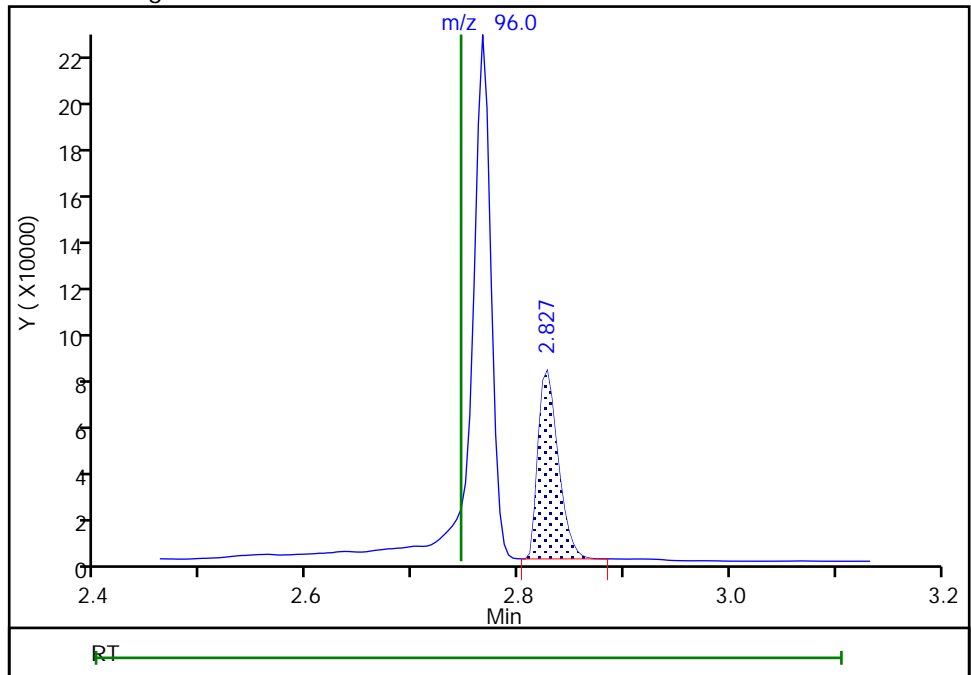
RT: 2.77
Area: 278782
Amount: 7.482480
Amount Units: ng/ul

Processing Integration Results



RT: 2.83
Area: 107819
Amount: 2.893851
Amount Units: ng/ul

Manual Integration Results



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-10-121918 Lab Sample ID: 480-147040-4
 Matrix: Water Lab File ID: U3314430.D
 Analysis Method: 8270D SIM ID Date Collected: 12/19/2018 13:50
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 16:41
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452764 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.21		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	31		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314430.D
 Lims ID: 480-147040-D-4-A
 Client ID: MW-10-121918
 Sample Type: Client
 Inject. Date: 27-Dec-2018 16:41:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077606-004
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 28-Dec-2018 11:56:38 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0316

First Level Reviewer: richardsd Date: 27-Dec-2018 17:29:24

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.835	2.750	0.085	92	109682	3.07	30.7	
3 1,4-Dioxane	88	2.876	2.786	0.090	86	2413	0.2070		a
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.944	0.004	98	298275	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314430.D

Injection Date: 27-Dec-2018 16:41:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-147040-D-4-A

Lab Sample ID: 480-147040-4

Worklist Smp#: 4

Client ID: MW-10-121918

Injection Vol: 1.0 ul

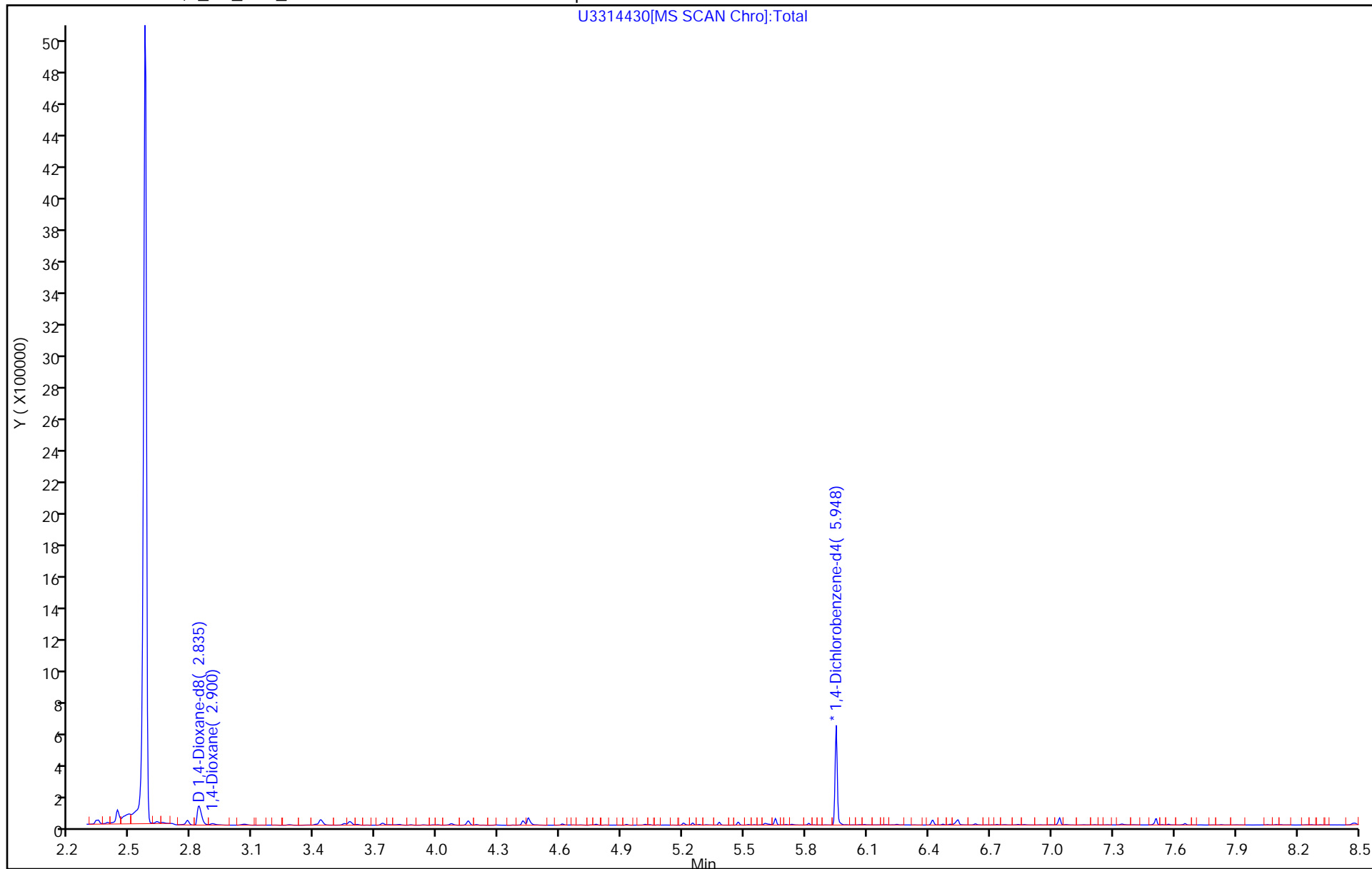
Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314430[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314430.D

Injection Date: 27-Dec-2018 16:41:30

Instrument ID: HP5973U

Lims ID: 480-147040-D-4-A

Lab Sample ID: 480-147040-4

Client ID: MW-10-121918

Operator ID: DR

ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

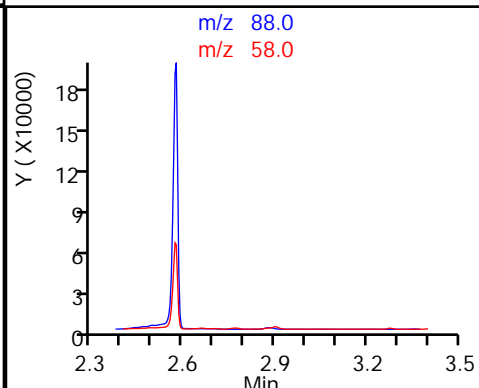
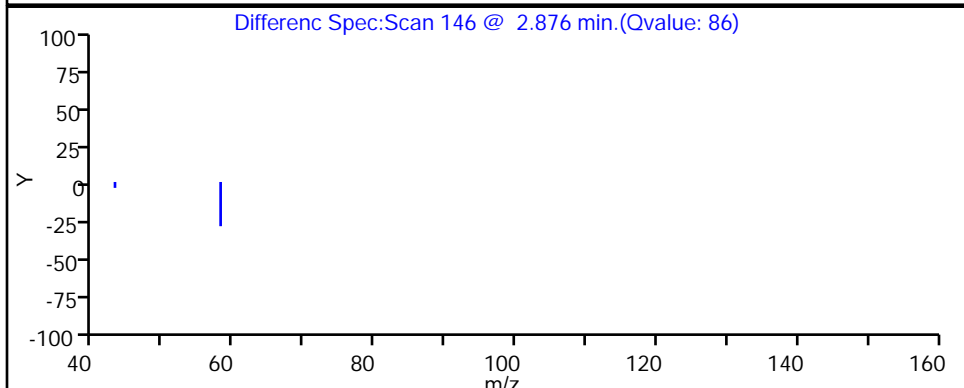
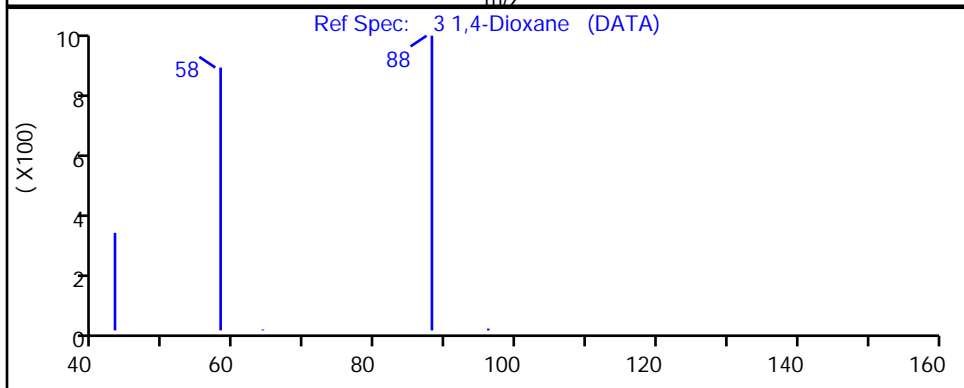
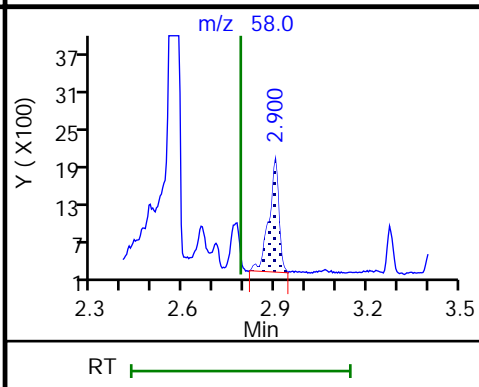
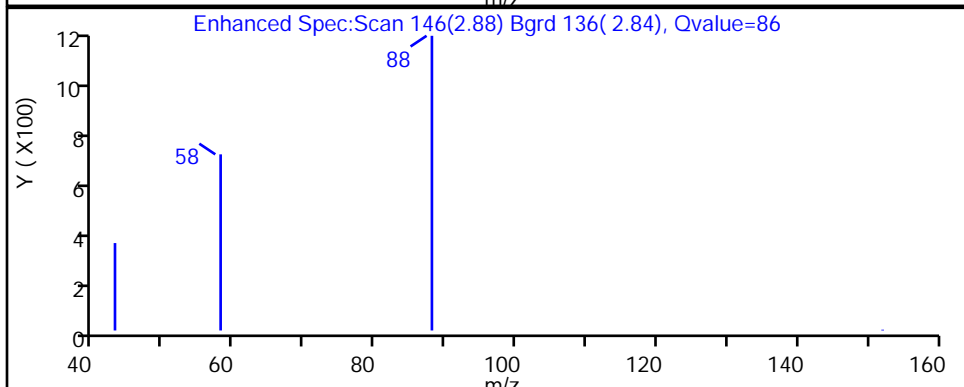
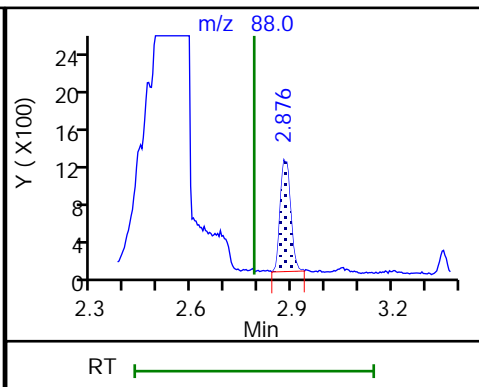
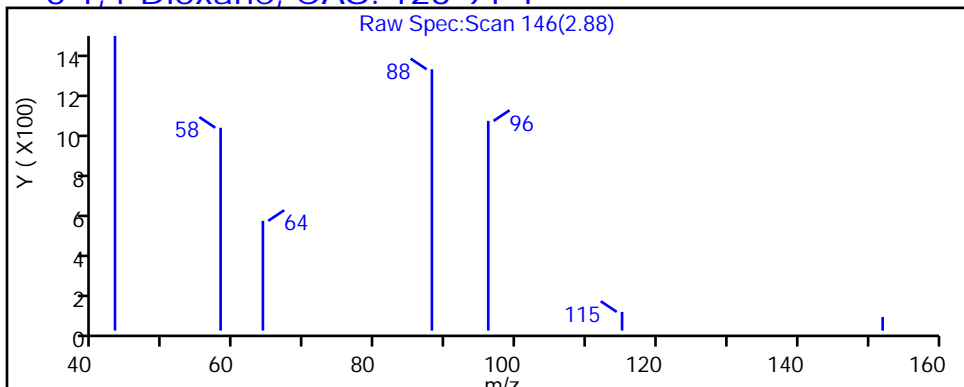
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314430.D

Injection Date: 27-Dec-2018 16:41:30

Instrument ID: HP5973U

Lims ID: 480-147040-D-4-A

Lab Sample ID: 480-147040-4

Client ID: MW-10-121918

Operator ID: DR

ALS Bottle#: 4 Worklist Smp#: 4

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

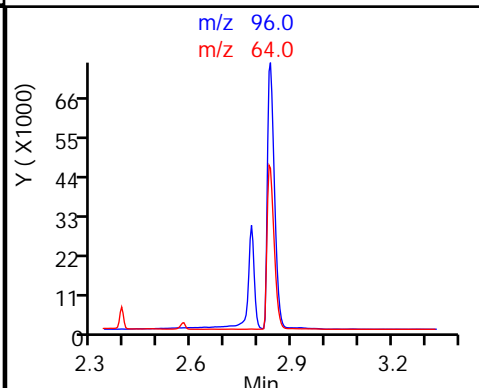
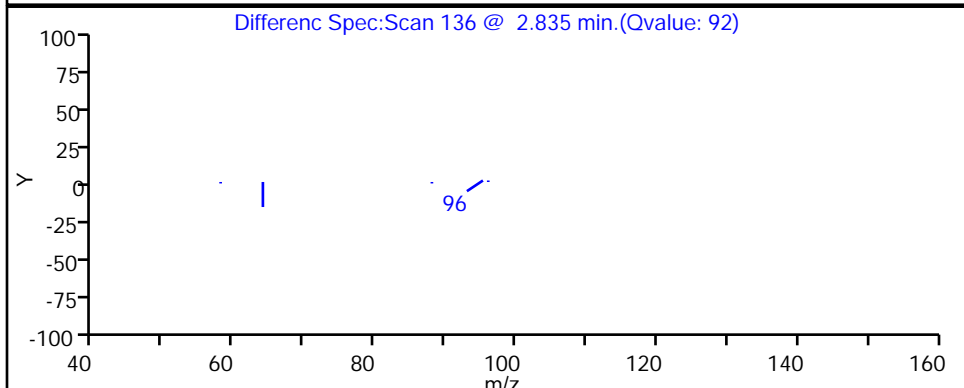
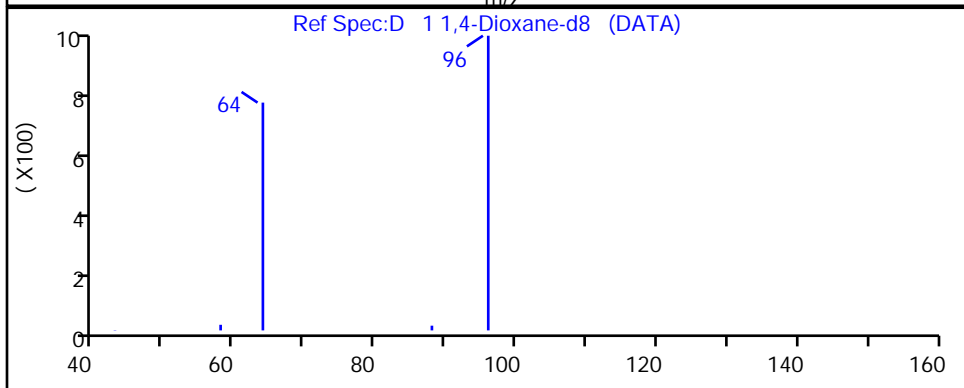
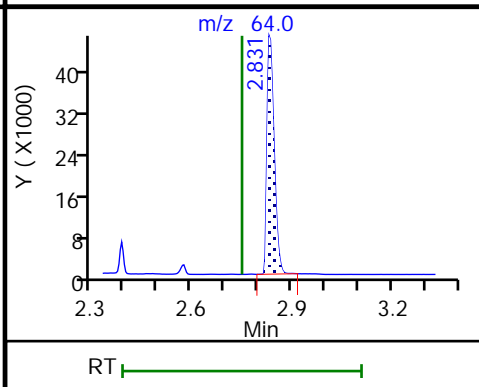
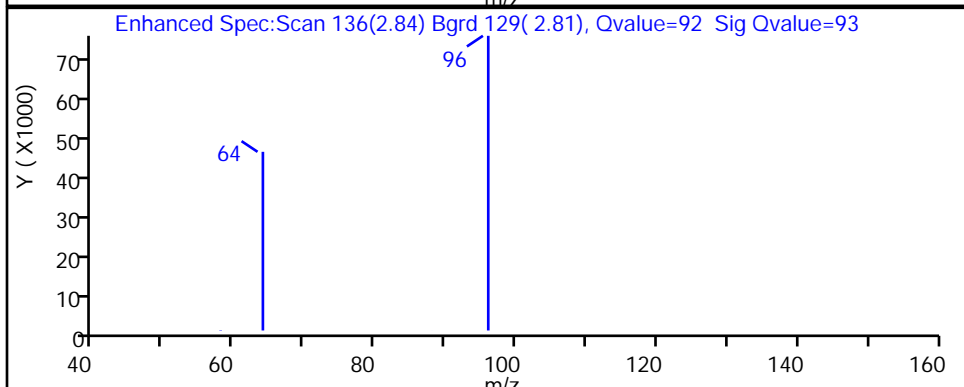
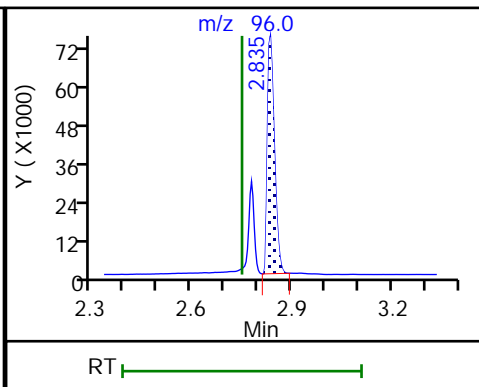
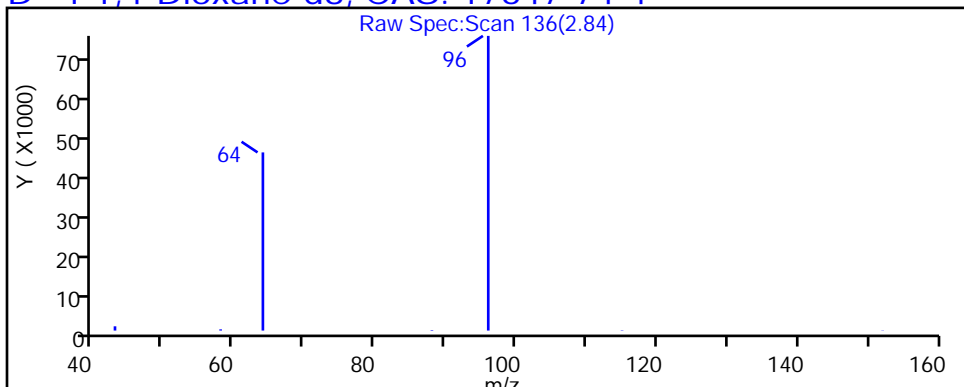
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



TestAmerica Buffalo

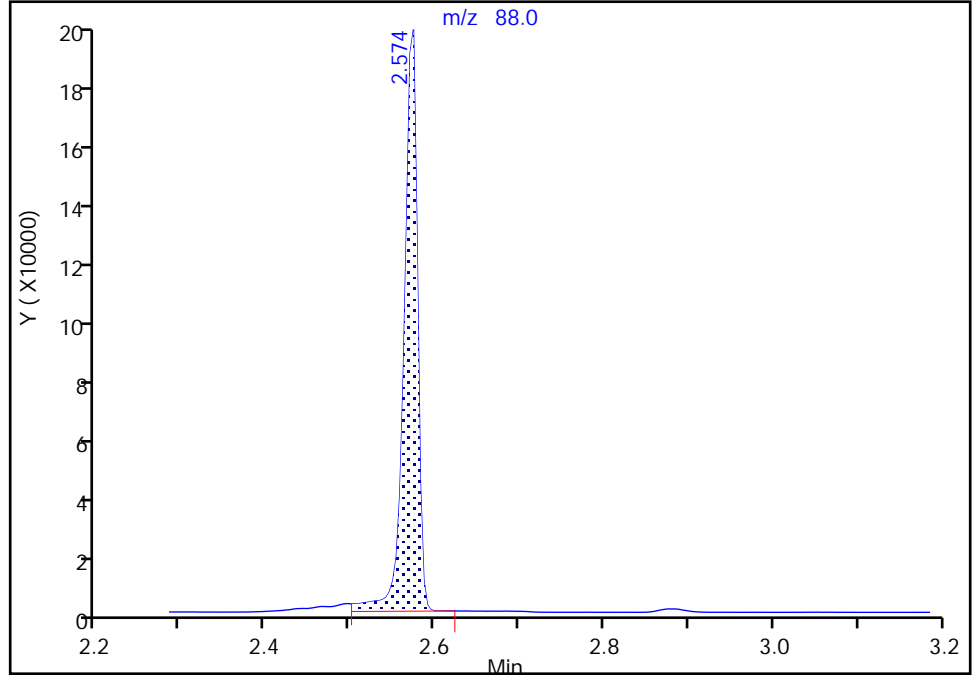
Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314430.D
Injection Date: 27-Dec-2018 16:41:30 Instrument ID: HP5973U
Lims ID: 480-147040-D-4-A Lab Sample ID: 480-147040-4
Client ID: MW-10-121918
Operator ID: DR ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Signal: 1

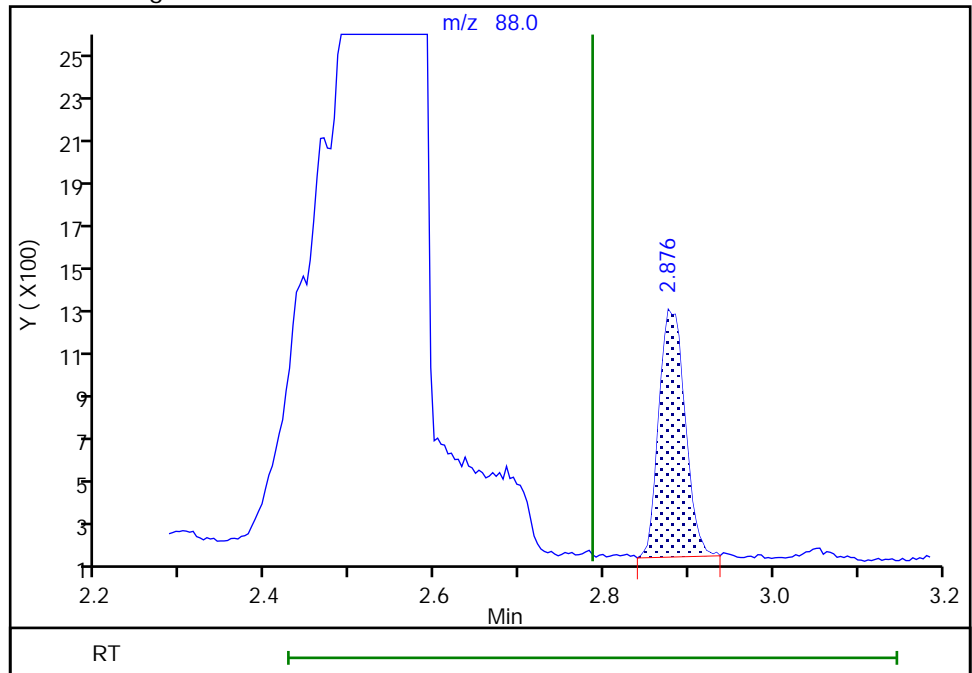
RT: 2.57
Area: 212807
Amount: 18.252066
Amount Units: ng/ul

Processing Integration Results



RT: 2.88
Area: 2413
Amount: 0.206959
Amount Units: ng/ul

Manual Integration Results



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-01R-121918 Lab Sample ID: 480-147040-5
 Matrix: Water Lab File ID: U3314431.D
 Analysis Method: 8270D SIM ID Date Collected: 12/19/2018 14:10
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 17:05
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452764 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	32		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314431.D
 Lims ID: 480-147040-C-5-A
 Client ID: MW-01R-121918
 Sample Type: Client
 Inject. Date: 27-Dec-2018 17:05:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077606-005
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 28-Dec-2018 11:56:38 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0316

First Level Reviewer: richardsd Date: 27-Dec-2018 17:53:57

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.835	2.750	0.085	90	111685	3.17	31.7	
3 1,4-Dioxane	88		2.786				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.952	5.944	0.008	97	294409	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314431.D

Injection Date: 27-Dec-2018 17:05:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-147040-C-5-A

Lab Sample ID: 480-147040-5

Worklist Smp#: 5

Client ID: MW-01R-121918

Injection Vol: 1.0 ul

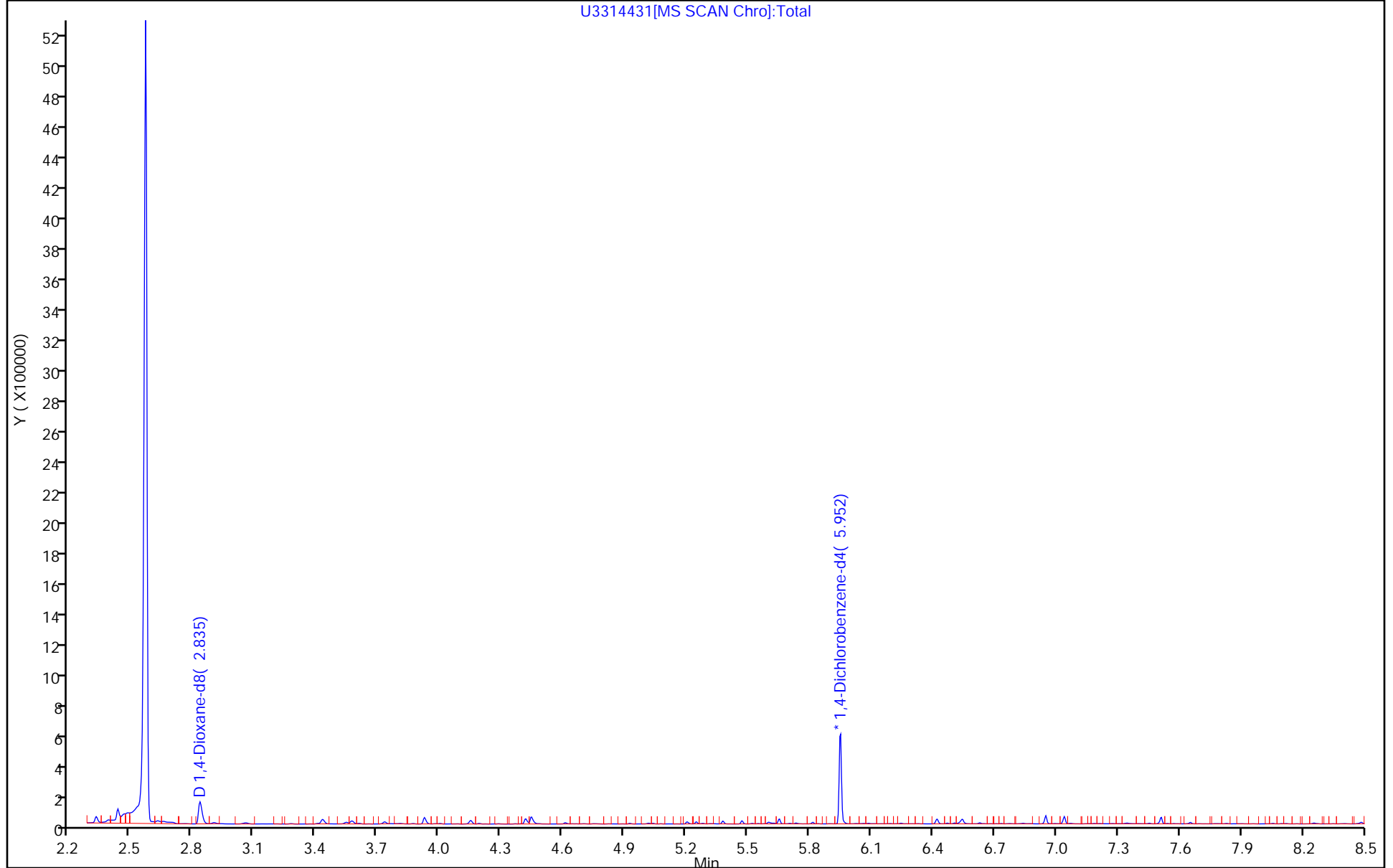
Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314431[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314431.D

Injection Date: 27-Dec-2018 17:05:30

Instrument ID: HP5973U

Lims ID: 480-147040-C-5-A

Lab Sample ID: 480-147040-5

Client ID: MW-01R-121918

Operator ID: DR

ALS Bottle#: 5 Worklist Smp#: 5

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

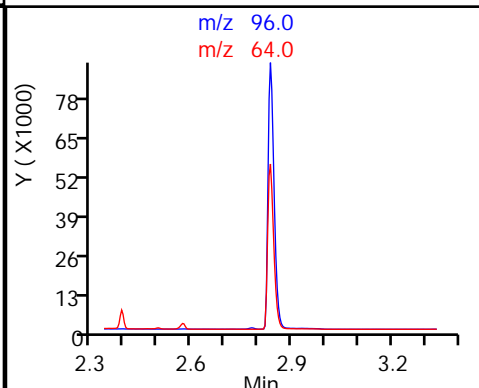
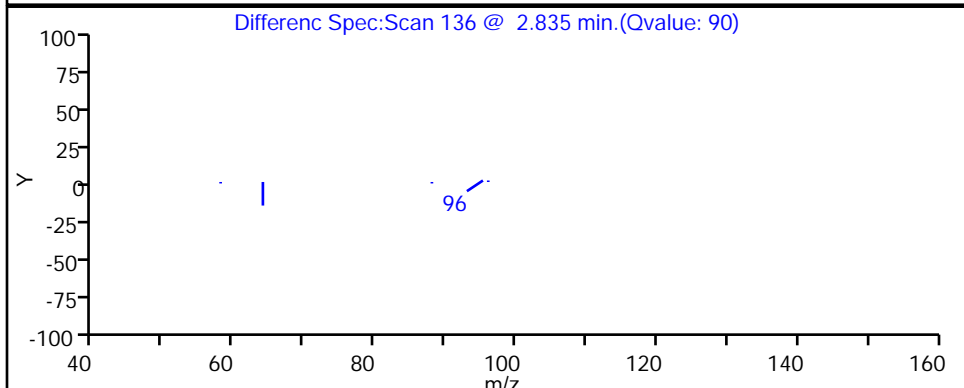
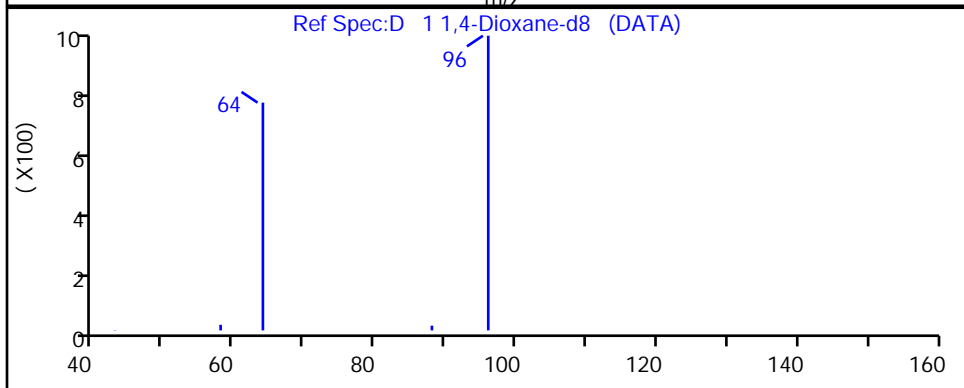
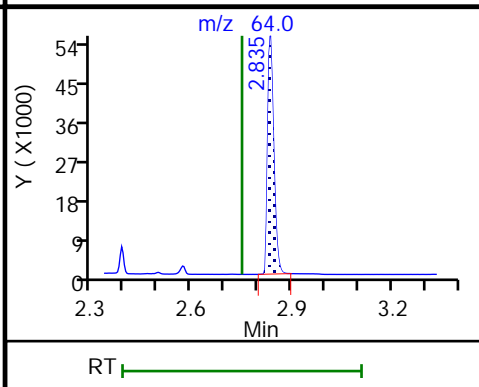
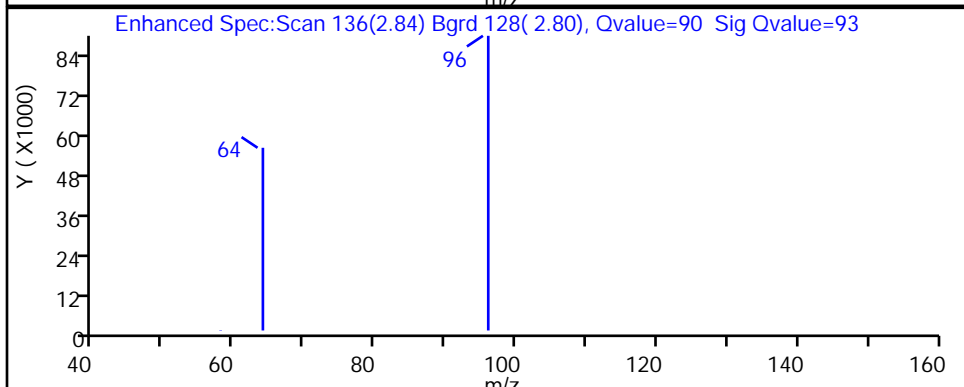
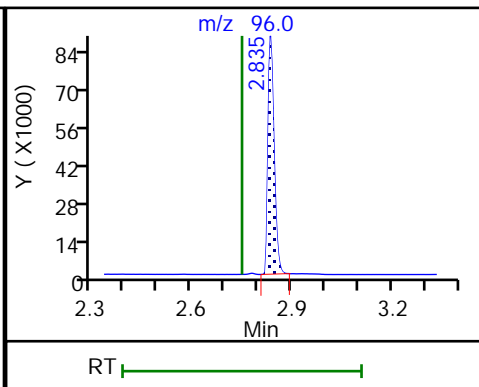
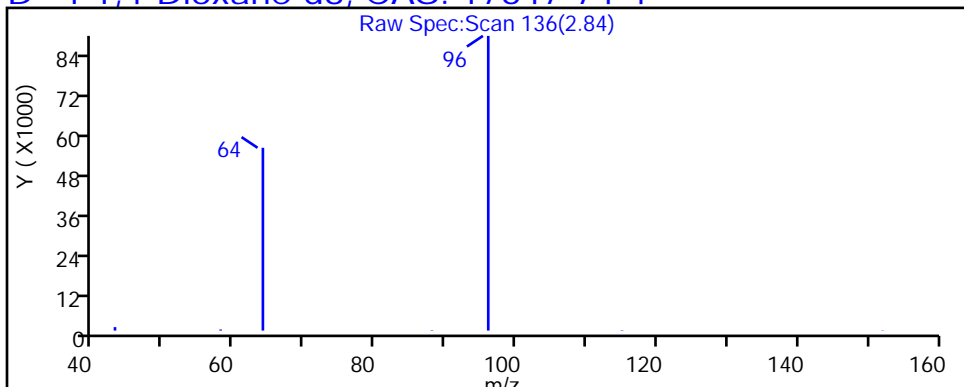
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

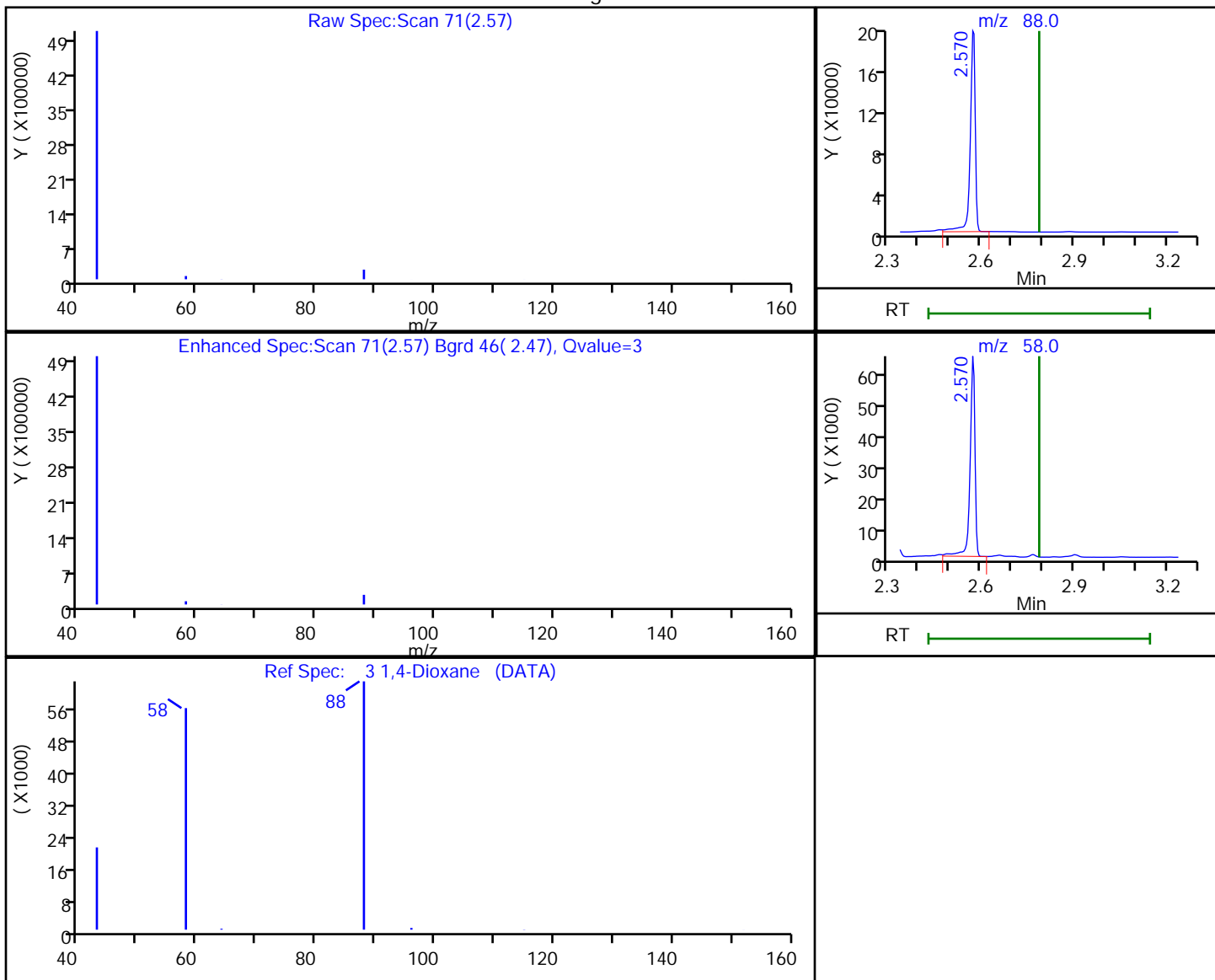


TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314431.D
 Injection Date: 27-Dec-2018 17:05:30 Instrument ID: HP5973U
 Lims ID: 480-147040-C-5-A Lab Sample ID: 480-147040-5
 Client ID: MW-01R-121918
 Operator ID: DR ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Column: Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.57	88.00	220430	18.566812
2.57	58.00	71334	

Reviewer: richardsd, 27-Dec-2018 17:29:29

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: FD-01-121918 Lab Sample ID: 480-147040-6
 Matrix: Water Lab File ID: U3314432.D
 Analysis Method: 8270D SIM ID Date Collected: 12/19/2018 00:00
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 17:30
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452764 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	32		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314432.D
 Lims ID: 480-147040-D-6-A
 Client ID: FD-01-121918
 Sample Type: Client
 Inject. Date: 27-Dec-2018 17:30:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077606-006
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 28-Dec-2018 11:56:38 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0316

First Level Reviewer: richardsd Date: 27-Dec-2018 18:43:29

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.835	2.750	0.085	91	115310	3.19	31.9	
3 1,4-Dioxane	88	2.884	2.786	0.098	88	2473	0.2018		a
* 2 1,4-Dichlorobenzene-d4	152	5.952	5.944	0.008	97	301963	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314432.D

Injection Date: 27-Dec-2018 17:30:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-147040-D-6-A

Lab Sample ID: 480-147040-6

Worklist Smp#: 6

Client ID: FD-01-121918

Injection Vol: 1.0 ul

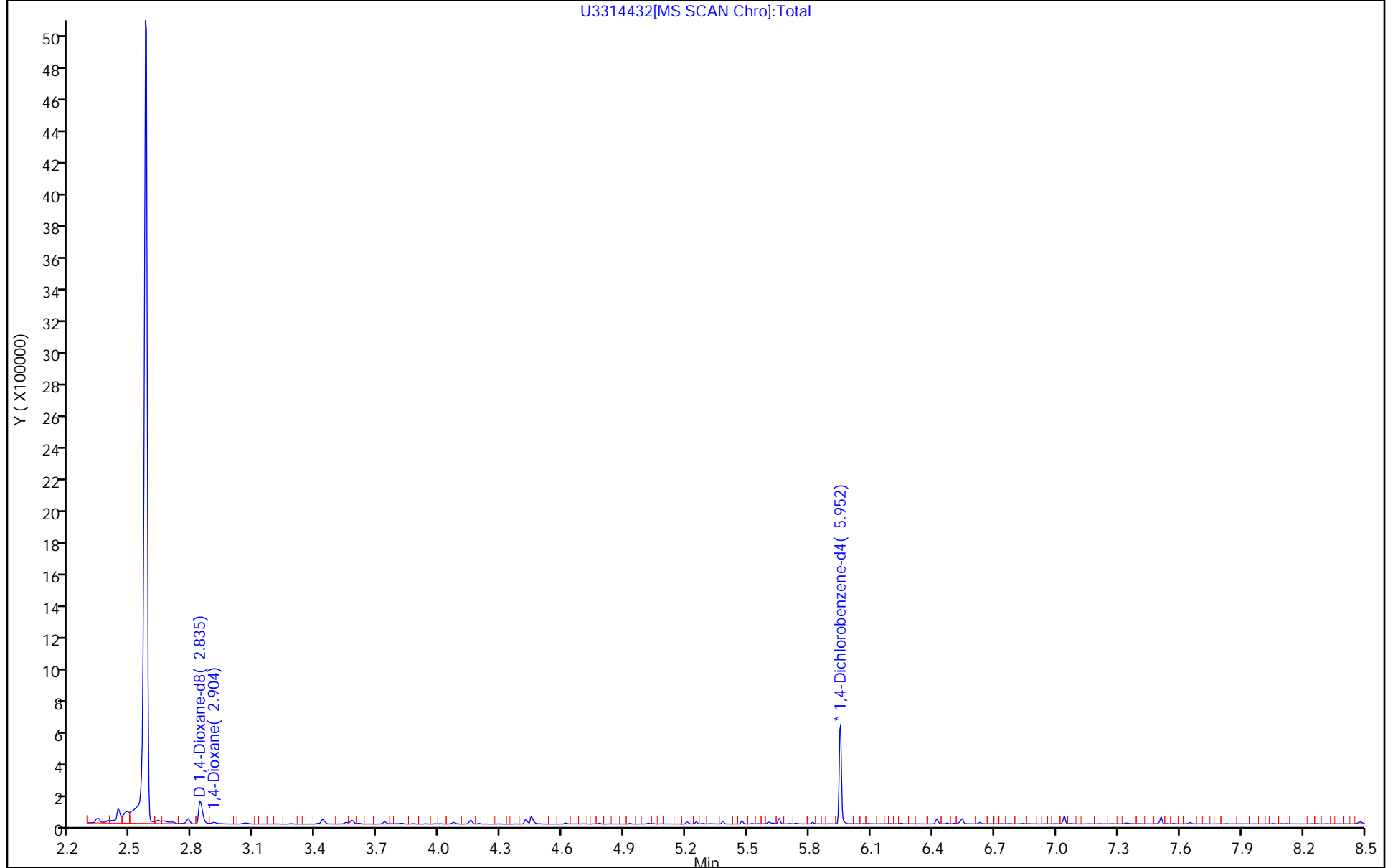
Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314432[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314432.D

Injection Date: 27-Dec-2018 17:30:30

Instrument ID: HP5973U

Lims ID: 480-147040-D-6-A

Lab Sample ID: 480-147040-6

Client ID: FD-01-121918

Operator ID: DR

ALS Bottle#: 6

Worklist Smp#: 6

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

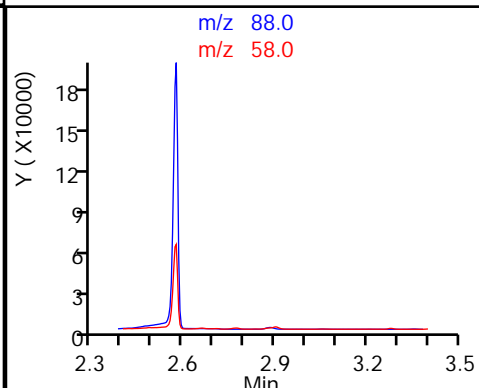
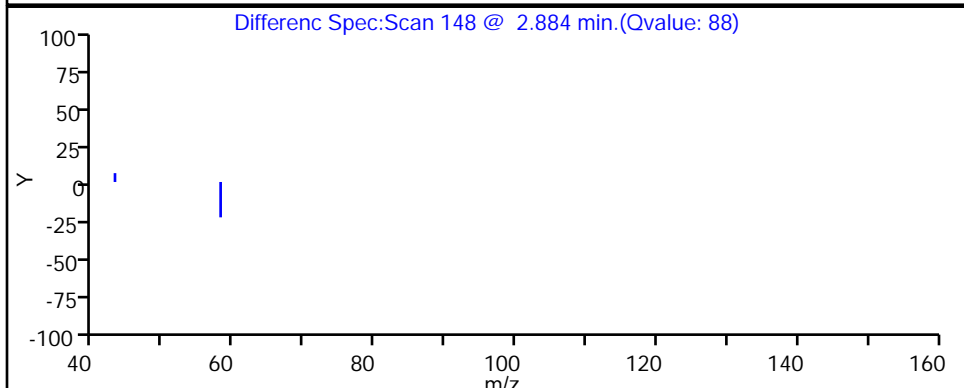
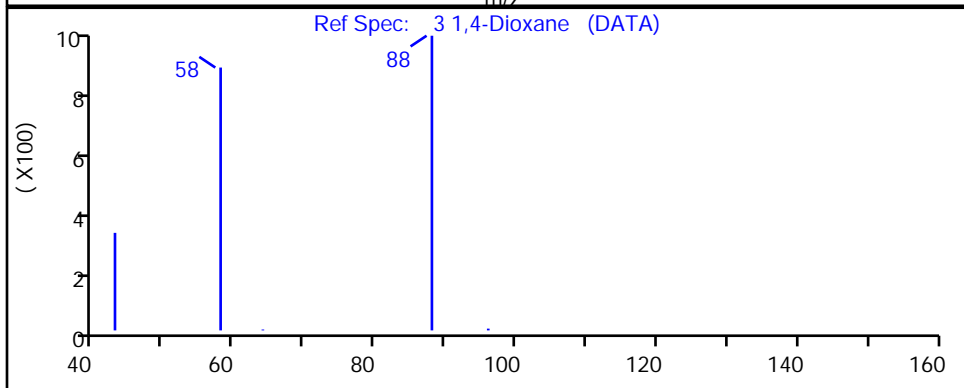
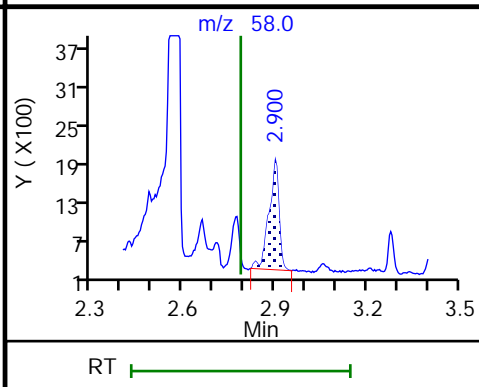
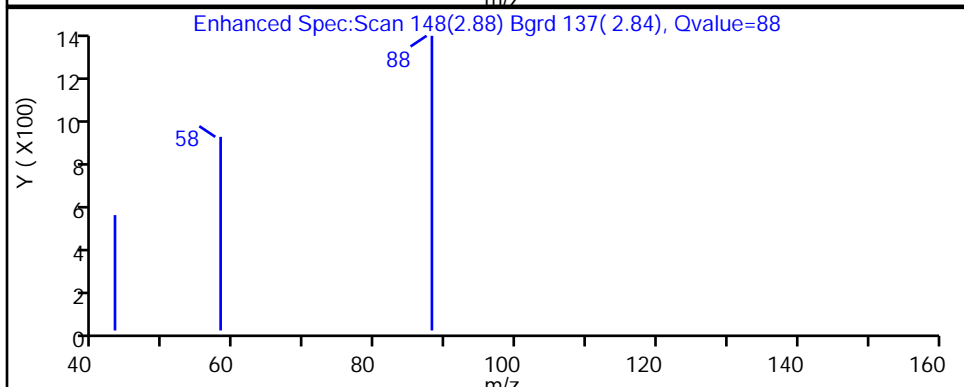
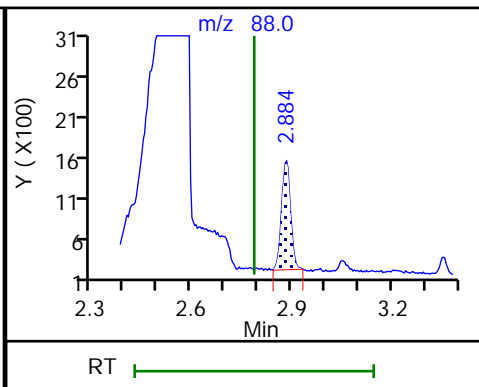
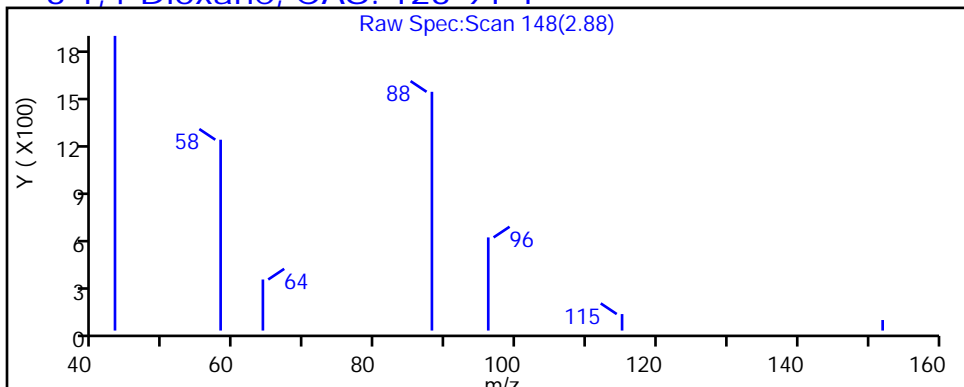
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314432.D

Injection Date: 27-Dec-2018 17:30:30

Instrument ID: HP5973U

Lims ID: 480-147040-D-6-A

Lab Sample ID: 480-147040-6

Client ID: FD-01-121918

Operator ID: DR

ALS Bottle#: 6

Worklist Smp#: 6

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

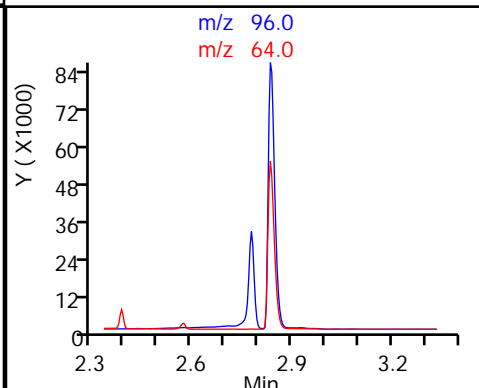
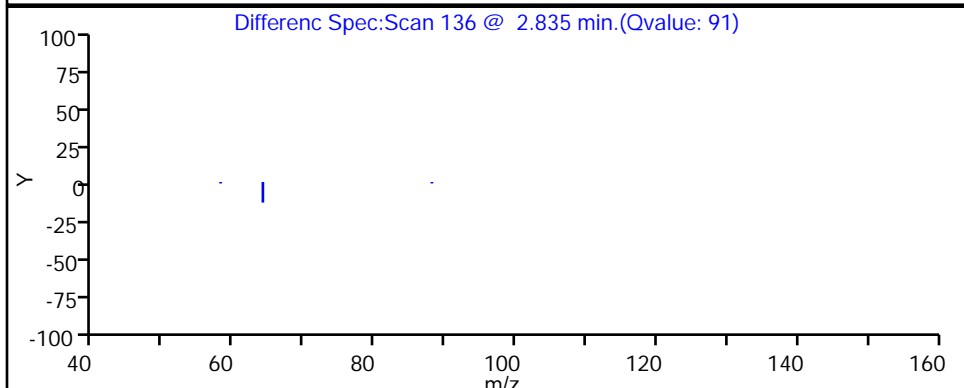
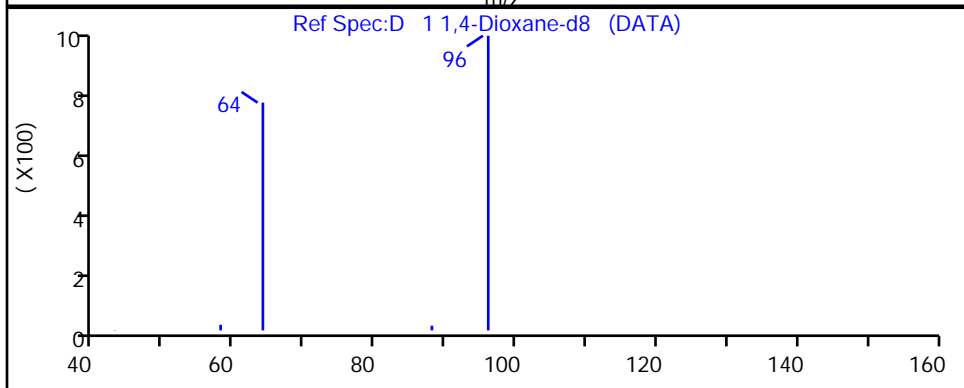
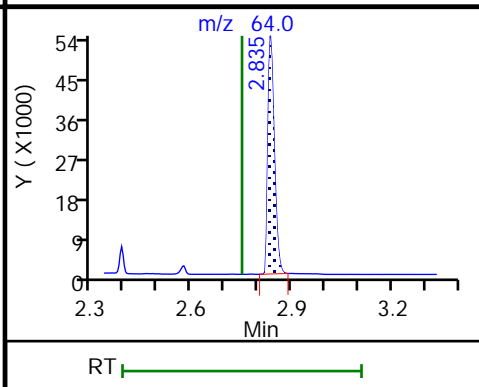
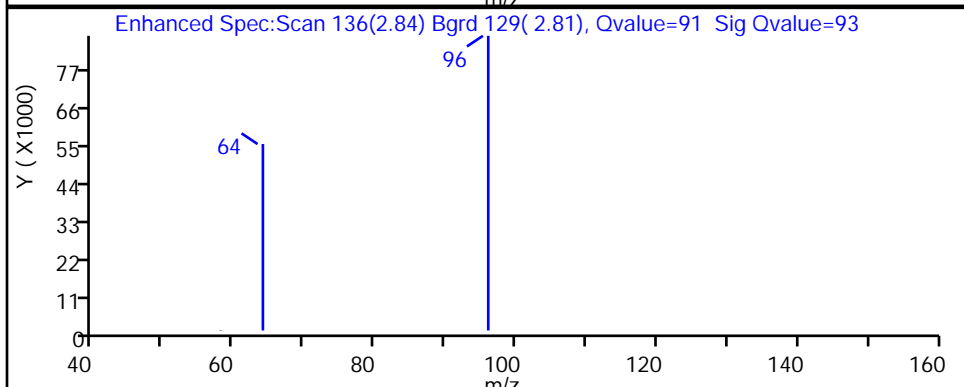
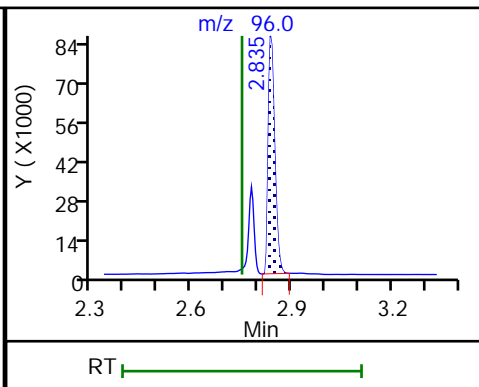
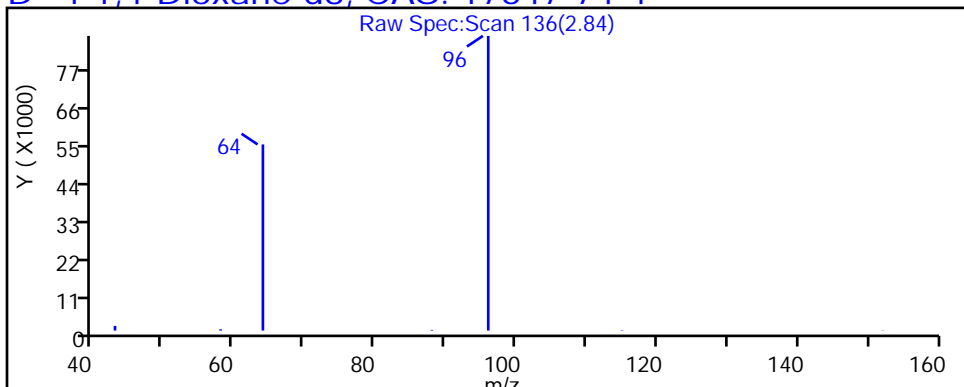
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



TestAmerica Buffalo

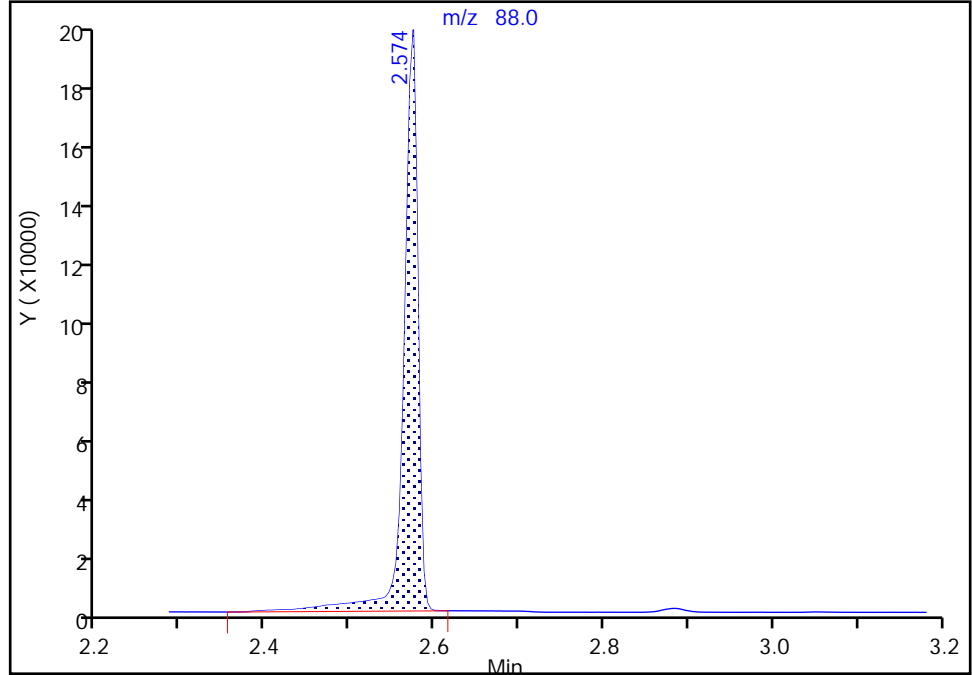
Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314432.D
Injection Date: 27-Dec-2018 17:30:30 Instrument ID: HP5973U
Lims ID: 480-147040-D-6-A Lab Sample ID: 480-147040-6
Client ID: FD-01-121918
Operator ID: DR ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Signal: 1

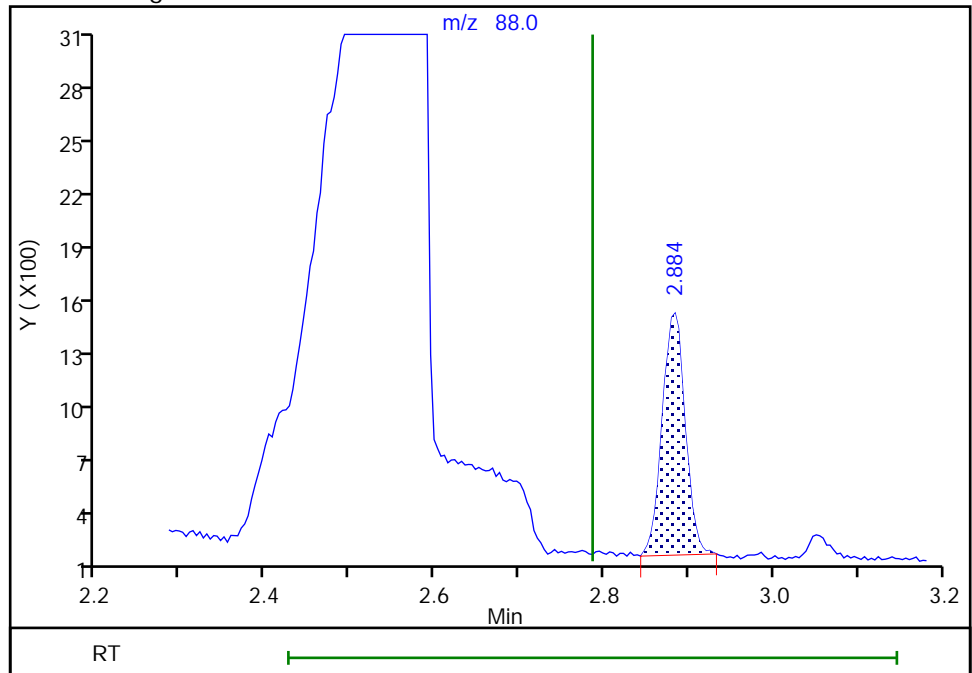
RT: 2.57
Area: 225938
Amount: 18.432481
Amount Units: ng/ul

Processing Integration Results



RT: 2.88
Area: 2473
Amount: 0.201752
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 27-Dec-2018 18:08:11
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1 Analy Batch No.: 449428

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/07/2018 15:39 Calibration End Date: 12/07/2018 17:41 Calibration ID: 35518

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-449428/3	U3314030.D
Level 2	IC 480-449428/4	U3314031.D
Level 3	ICIS 480-449428/5	U3314032.D
Level 4	IC 480-449428/6	U3314033.D
Level 5	IC 480-449428/7	U3314034.D
Level 6	IC 480-449428/8	U3314035.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	1.0572 1.0474	1.0842	1.0587	1.0635	1.0670	AveID		1.0630			0.0100	1.2		20.0			
1,4-Dioxane-d8	0.4473 0.4844	0.4701	0.4947	0.4843	0.4938	Ave		0.4791			0.0100	3.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1 Analy Batch No.: 449428

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/07/2018 15:39 Calibration End Date: 12/07/2018 17:41 Calibration ID: 35518

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-449428/3	U3314030.D
Level 2	IC 480-449428/4	U3314031.D
Level 3	ICIS 480-449428/5	U3314032.D
Level 4	IC 480-449428/6	U3314033.D
Level 5	IC 480-449428/7	U3314034.D
Level 6	IC 480-449428/8	U3314035.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		AveID	6632 47932	14705	28197	31329	39525	0.200 1.20	0.400	0.600	0.800	1.00
1,4-Dioxane-d8	DCBd 4	Ave	62732 457627	135626	266324	294594	370419	2.00 12.0	4.00	6.00	8.00	10.0

Curve Type Legend:

Ave = Average ISTD AveID = Average isotope dilution
--

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314030.D
 Lims ID: IC - SIM 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 07-Dec-2018 15:39:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:47 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 16:23:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.746	2.746	0.000	99	62732	2.00	1.87	
3 1,4-Dioxane	88	2.786	2.786	0.000	94	6632	0.2000	0.1989	
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	98	280522	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00060 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00159 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314030.D

Injection Date: 07-Dec-2018 15:39:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.2

Worklist Smp#: 3

Client ID:

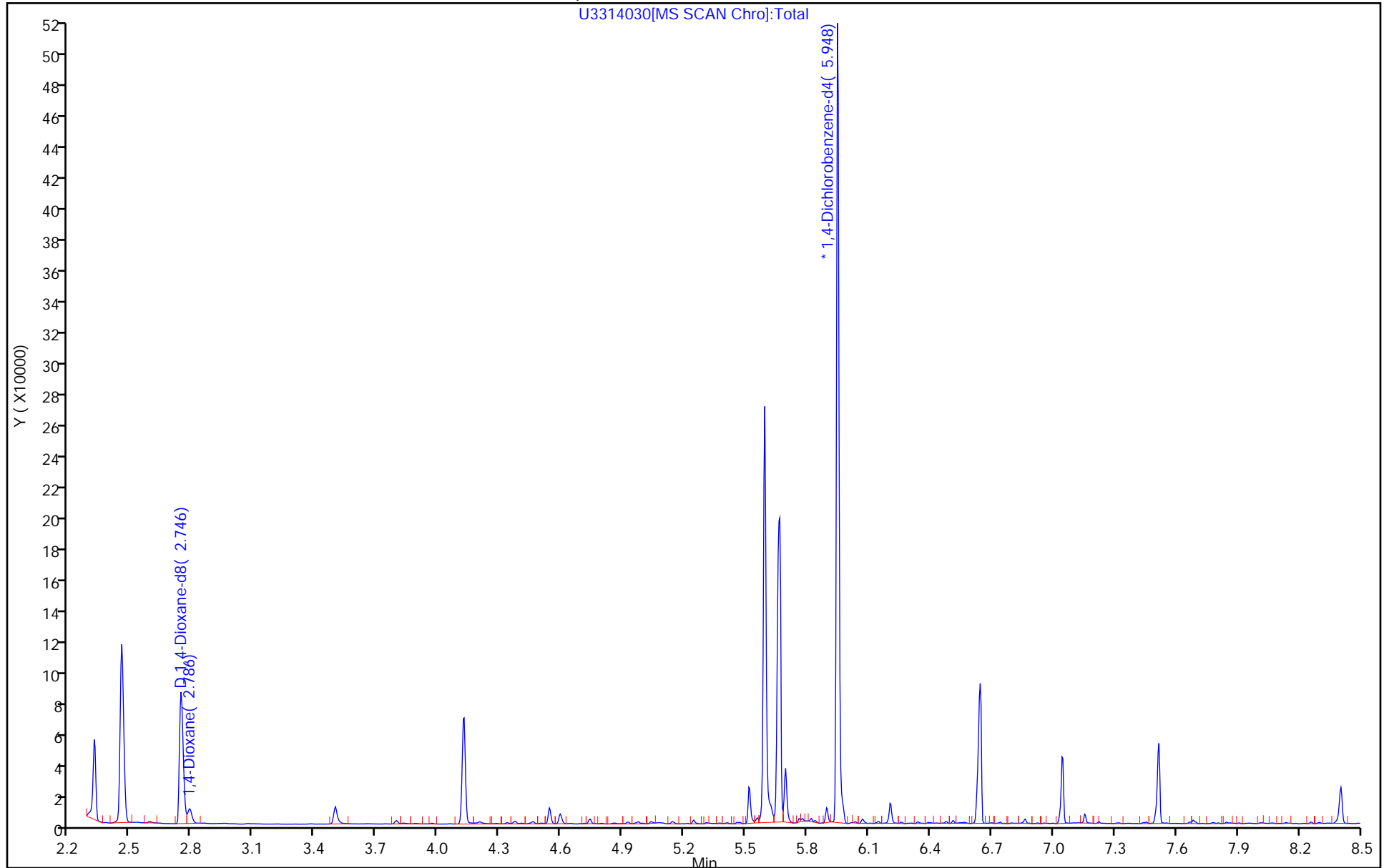
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314031.D
 Lims ID: IC - SIM 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 07-Dec-2018 16:04:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-004
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:48 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 16:28:12

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.741	2.746	-0.005	99	135626	4.00	3.93	
3 1,4-Dioxane	88	2.786	2.786	0.000	92	14705	0.4000	0.4080	
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	97	288480	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00061 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00159 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314031.D

Injection Date: 07-Dec-2018 16:04:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.4

Worklist Smp#: 4

Client ID:

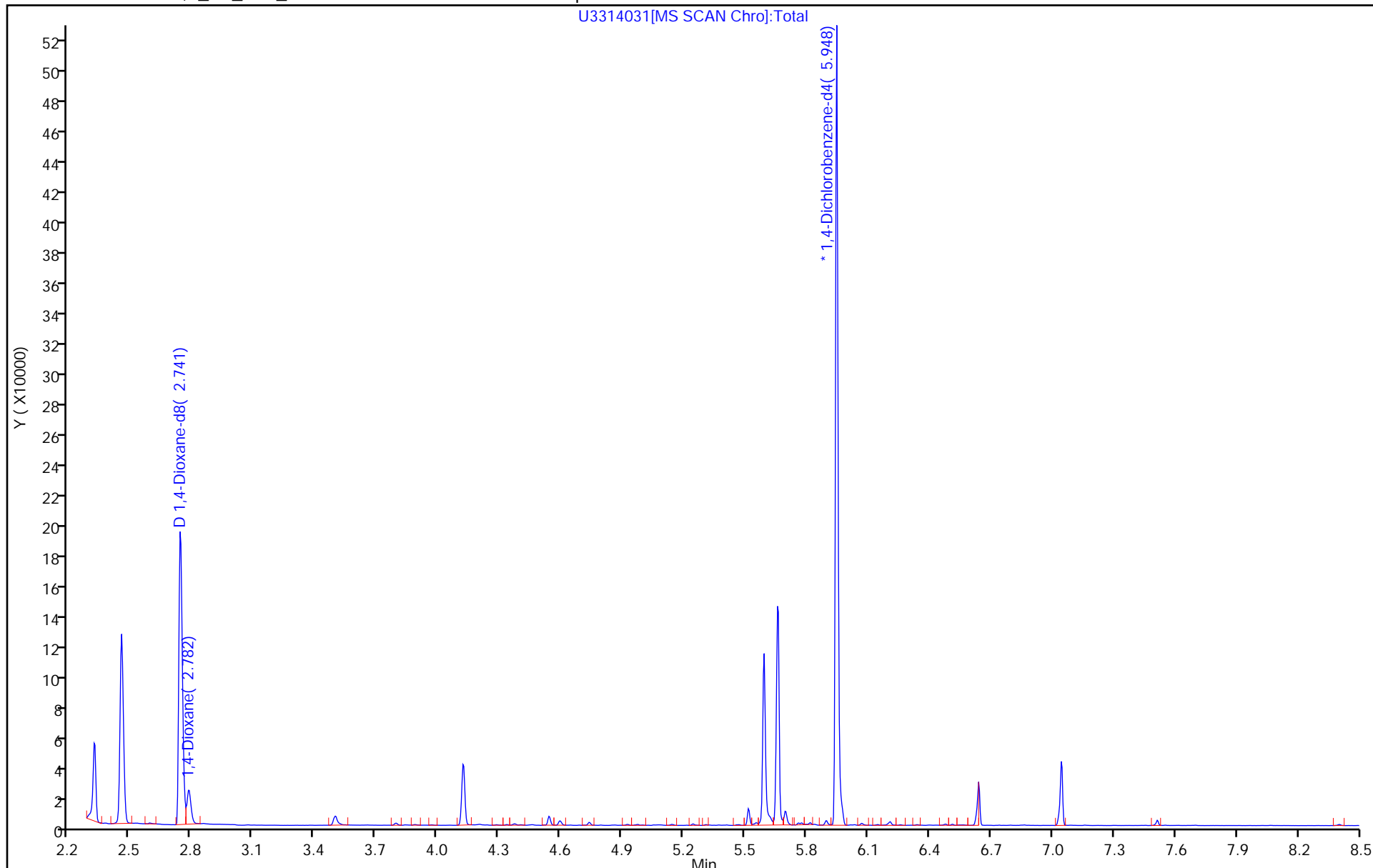
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314032.D
 Lims ID: ICIS - SIM 0.6
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 07-Dec-2018 16:28:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-005
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:48 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 16:58:59

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.745	2.745	0.000	97	266324	6.00	6.20	
3 1,4-Dioxane	88	2.786	2.786	0.000	92	28197	0.6000	0.5976	
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	97	358908	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00062 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00159 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314032.D

Injection Date: 07-Dec-2018 16:28:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: ICIS - SIM 0.6

Worklist Smp#: 5

Client ID:

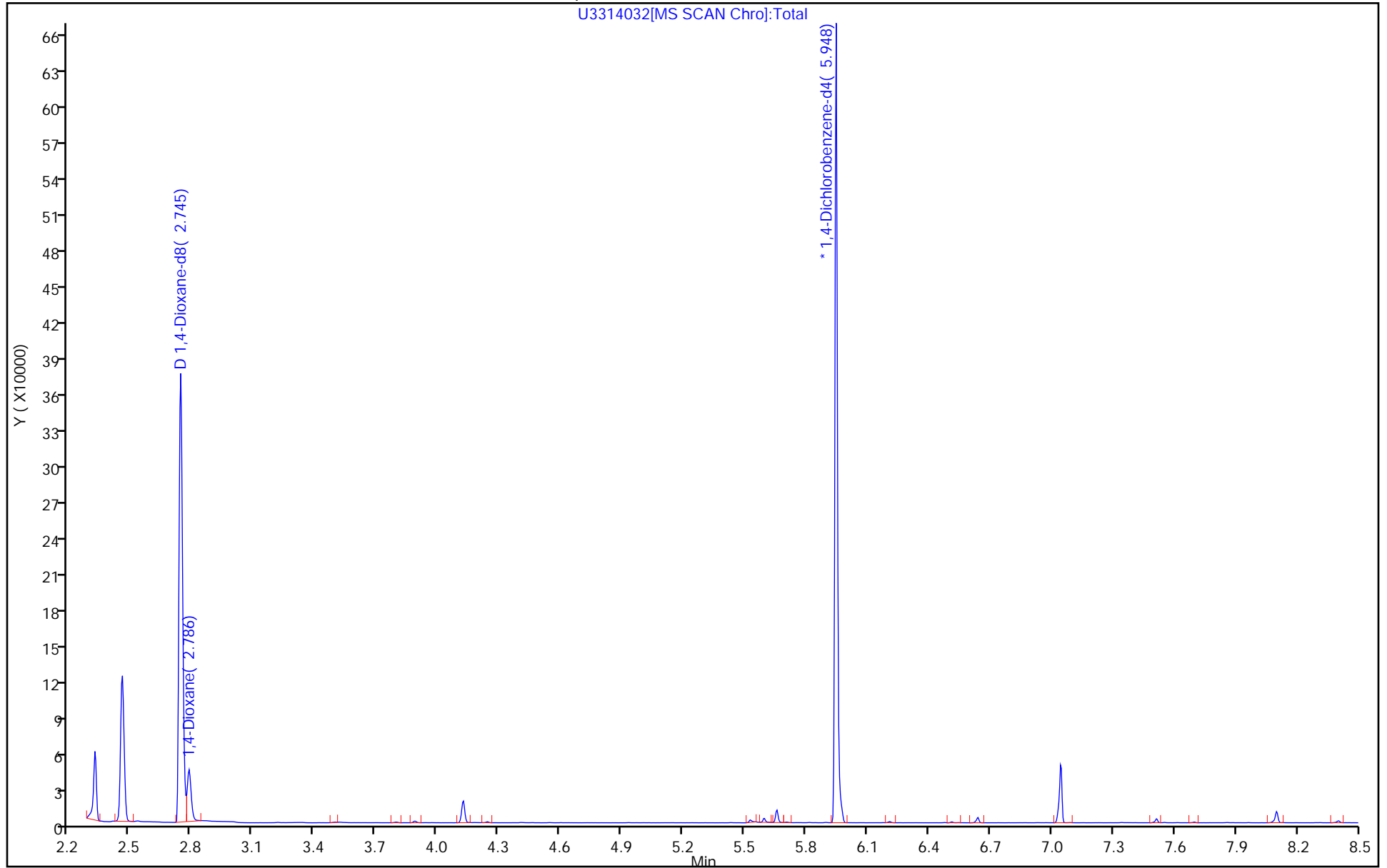
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314033.D
 Lims ID: IC - SIM 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 07-Dec-2018 16:52:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-006
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:49 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 17:40:49

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.746	2.745	0.001	95	294594	8.00	8.09	
3 1,4-Dioxane	88	2.786	2.786	0.000	91	31329	0.8000	0.8003	
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	98	304160	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00063 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00159 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314033.D

Injection Date: 07-Dec-2018 16:52:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.8

Worklist Smp#: 6

Client ID:

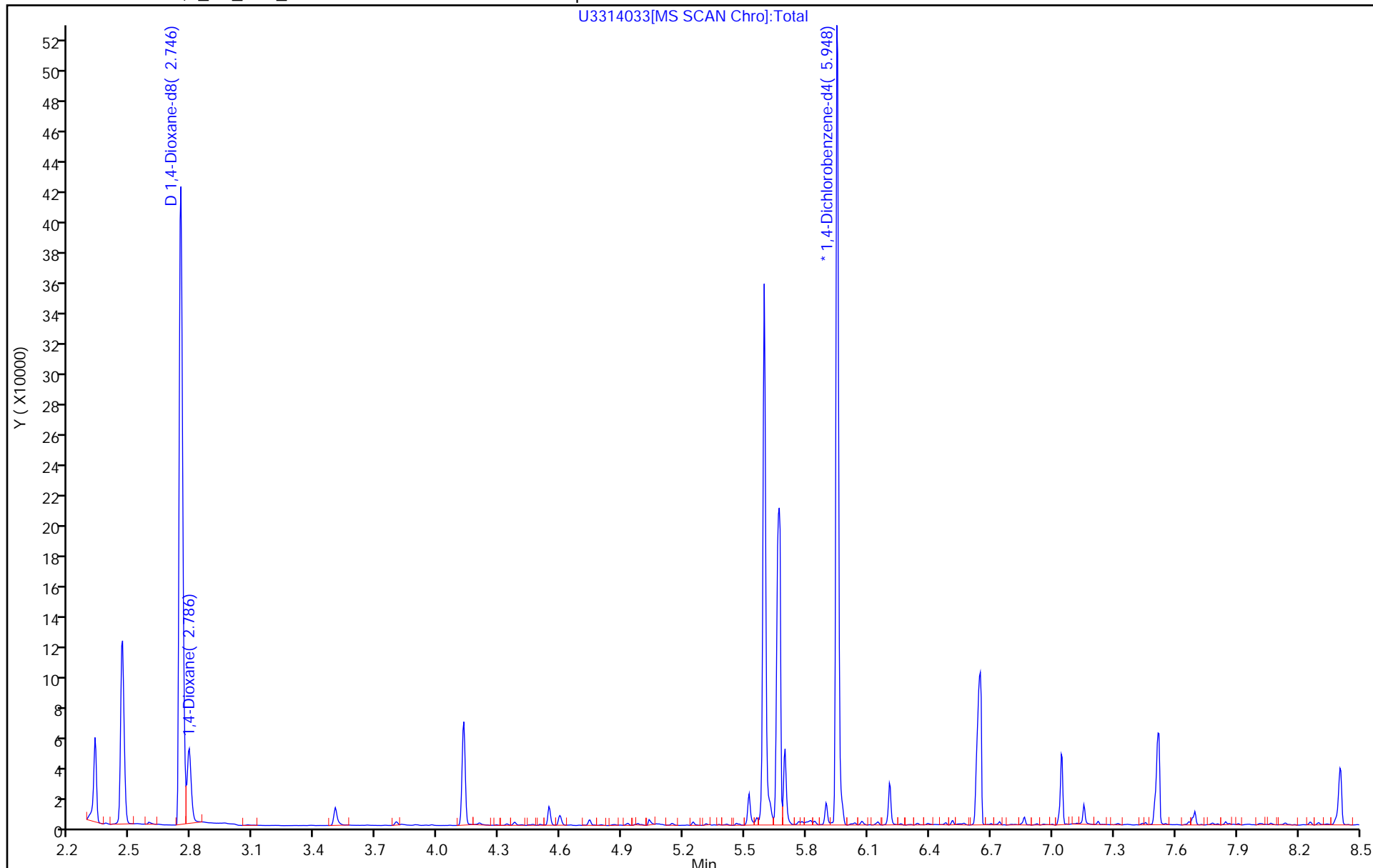
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314034.D
 Lims ID: IC - SIM 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 07-Dec-2018 17:17:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-007
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:51 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 17:57:28

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.746	2.745	0.001	94	370419	10.0	10.3	
3 1,4-Dioxane	88	2.786	2.786	0.000	91	39525	1.00	1.00	
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	98	300067	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00064 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00159 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314034.D

Injection Date: 07-Dec-2018 17:17:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 1.0

Worklist Smp#: 7

Client ID:

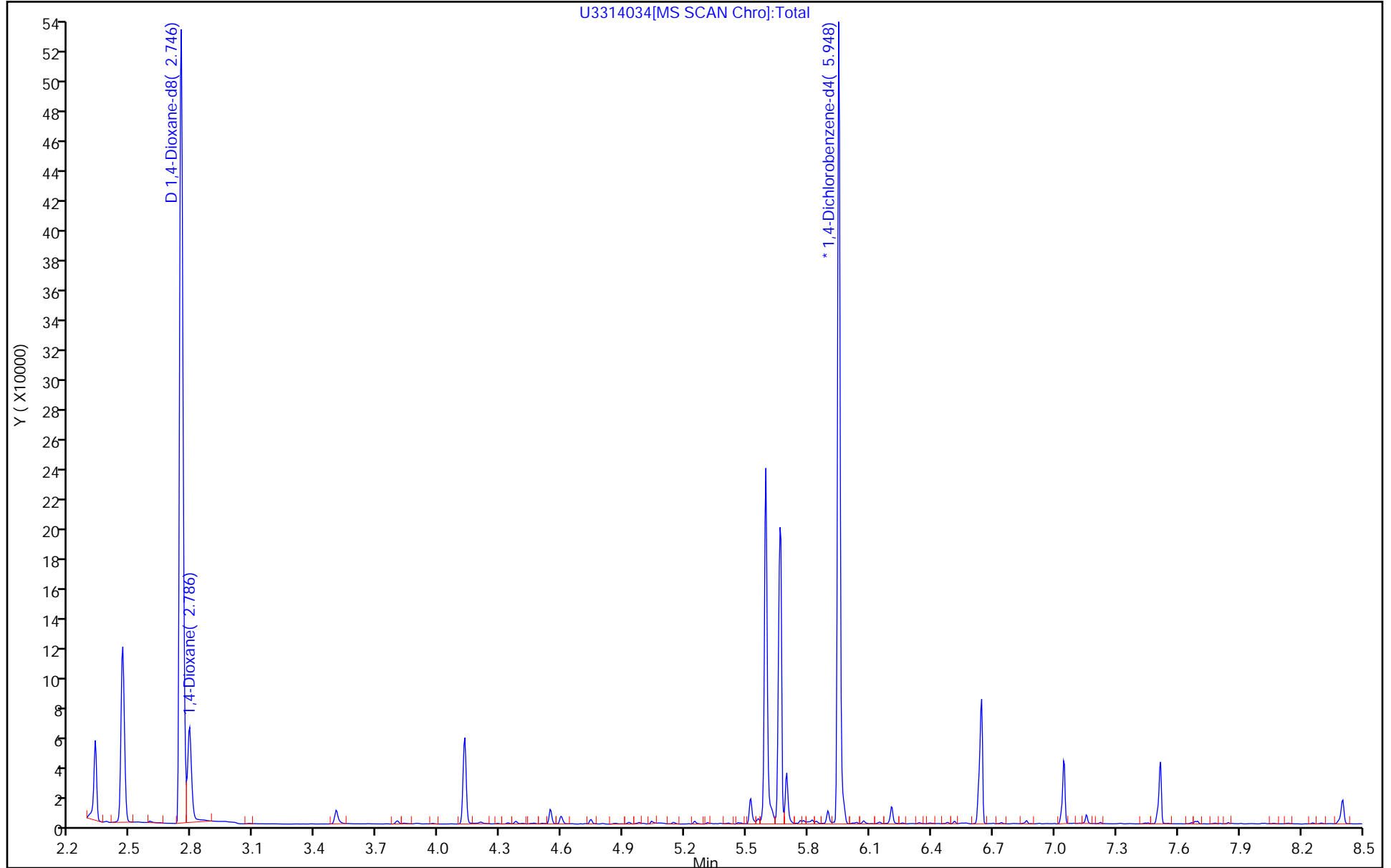
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Lims ID: IC - SIM 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 07-Dec-2018 17:41:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-008
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:52 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 17:57:42

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.746	2.745	0.001	95	457627	12.0	12.1	
3 1,4-Dioxane	88	2.786	2.786	0.000	92	47932	1.20	1.18	
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.948	0.000	97	314900	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00065 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00159 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D

Injection Date: 07-Dec-2018 17:41:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 1.2

Worklist Smp#: 8

Client ID:

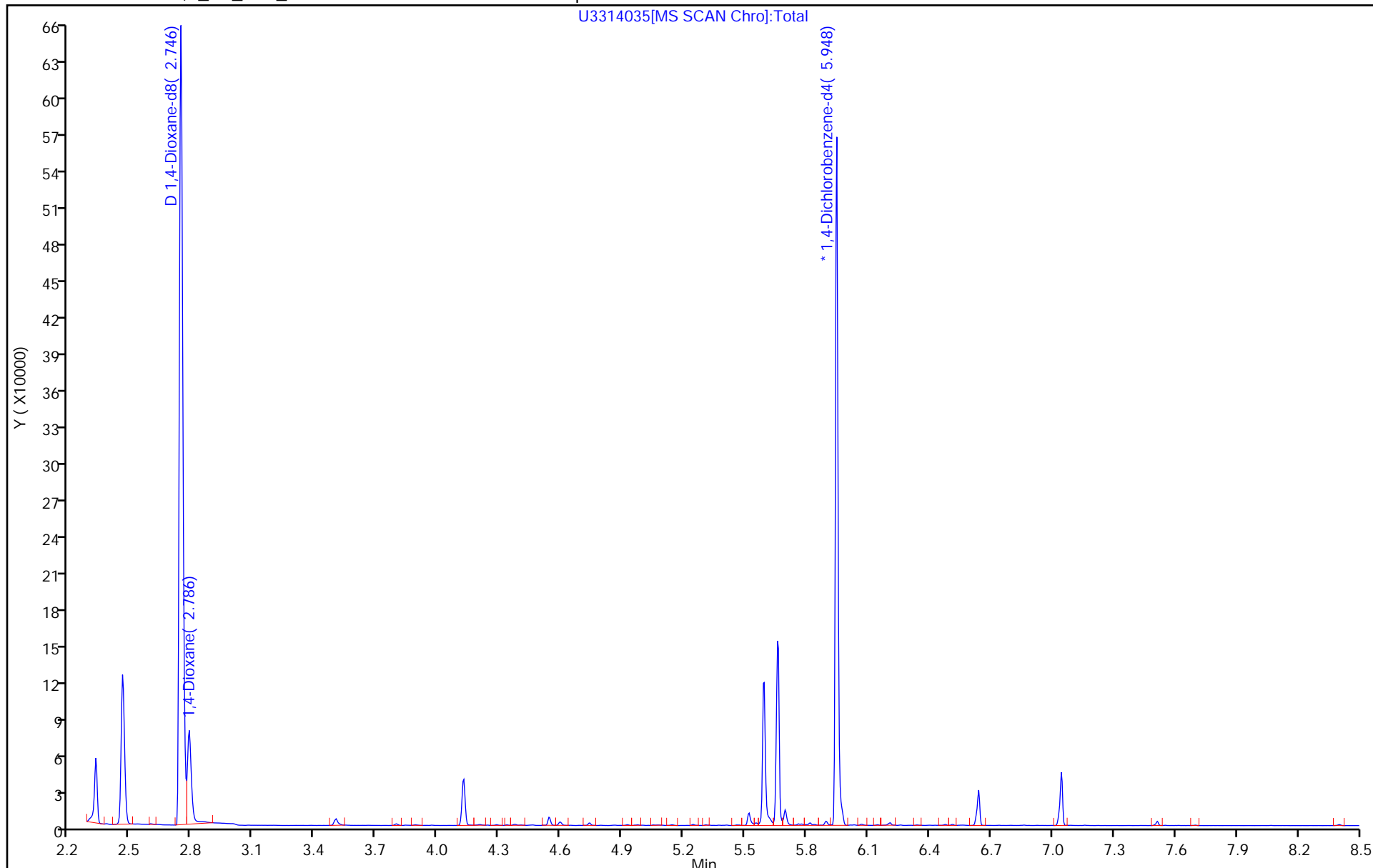
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCVIS 480-452523/3 Calibration Date: 12/27/2018 03:20
 Instrument ID: HP5973U Calib Start Date: 12/07/2018 15:39
 GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm) Calib End Date: 12/07/2018 17:41
 Lab File ID: U3314398.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	AveID	1.063	1.032	0.0100	582	600	-3.0	20.0
1,4-Dioxane-d8	Ave	0.4791	0.5047	0.0100	6320	6000	5.3	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314398.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 27-Dec-2018 03:20:30 ALS Bottle#: 33 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:27 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 12:09:56

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.750	2.746	0.004	90	259467	6.00	6.32	
3 1,4-Dioxane	88	2.790	2.790	0.000	87	26768	0.6000	0.5823	
* 2 1,4-Dichlorobenzene-d4	152	5.944	5.944	0.000	97	342724	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00062 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314398.D

Injection Date: 27-Dec-2018 03:20:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

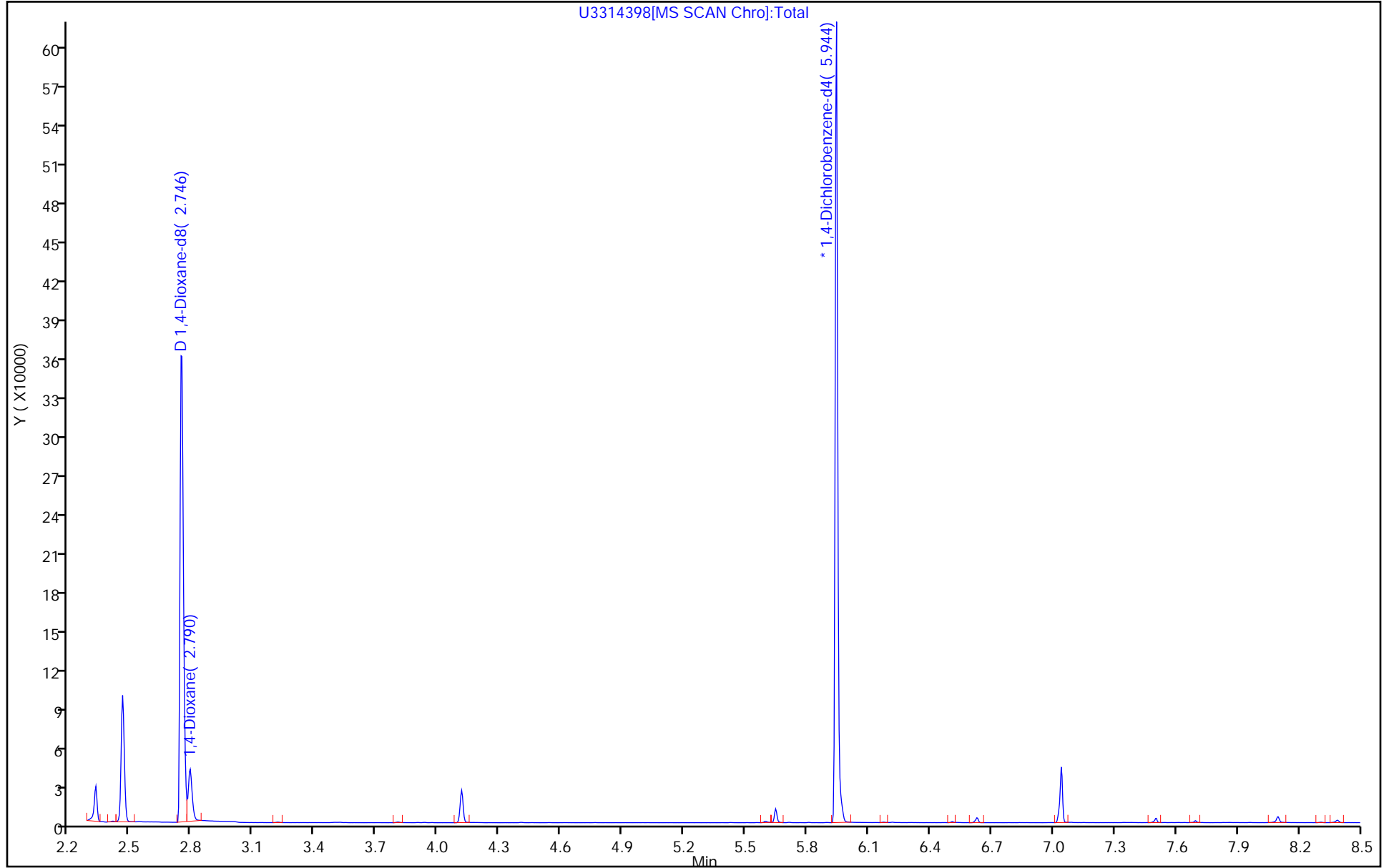
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 33

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCVIS 480-452764/3 Calibration Date: 12/27/2018 16:17
 Instrument ID: HP5973U Calib Start Date: 12/07/2018 15:39
 GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm) Calib End Date: 12/07/2018 17:41
 Lab File ID: U3314429.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	AveID	1.063	1.004	0.0100	567	600	-5.5	20.0
1,4-Dioxane-d8	Ave	0.4791	0.5142	0.0100	6440	6000	7.3	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314429.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 27-Dec-2018 16:17:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077606-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 28-Dec-2018 11:56:38 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0316

First Level Reviewer: richardsd Date: 27-Dec-2018 17:01:13

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.746	2.750	-0.004	93	226405	6.00	6.44	
3 1,4-Dioxane	88	2.786	2.786	0.000	88	22738	0.6000	0.5669	
* 2 1,4-Dichlorobenzene-d4	152	5.944	5.944	0.000	97	293530	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00062 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314429.D

Injection Date: 27-Dec-2018 16:17:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

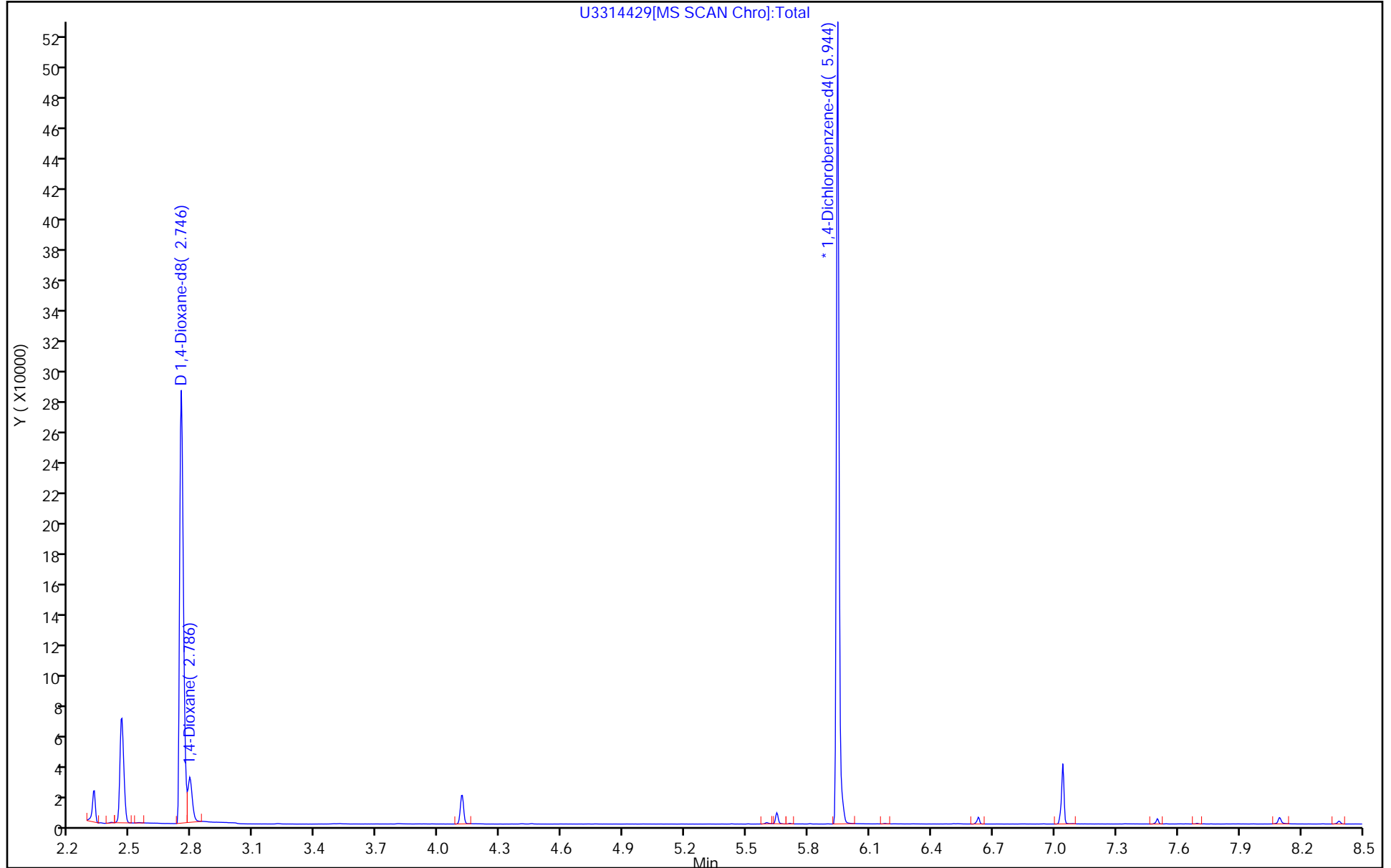
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314029.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 07-Dec-2018 15:11:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077050-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 07-Dec-2018 17:57:46 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0318

First Level Reviewer: richardsd Date: 07-Dec-2018 15:35:28

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	11.026	11.026	0.000	0	832			NR
5 4,4'-DDD	235	11.325	11.325	0.000	92	3201			NR
6 4,4'-DDT	235	11.608	11.608	0.000	97	517196	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

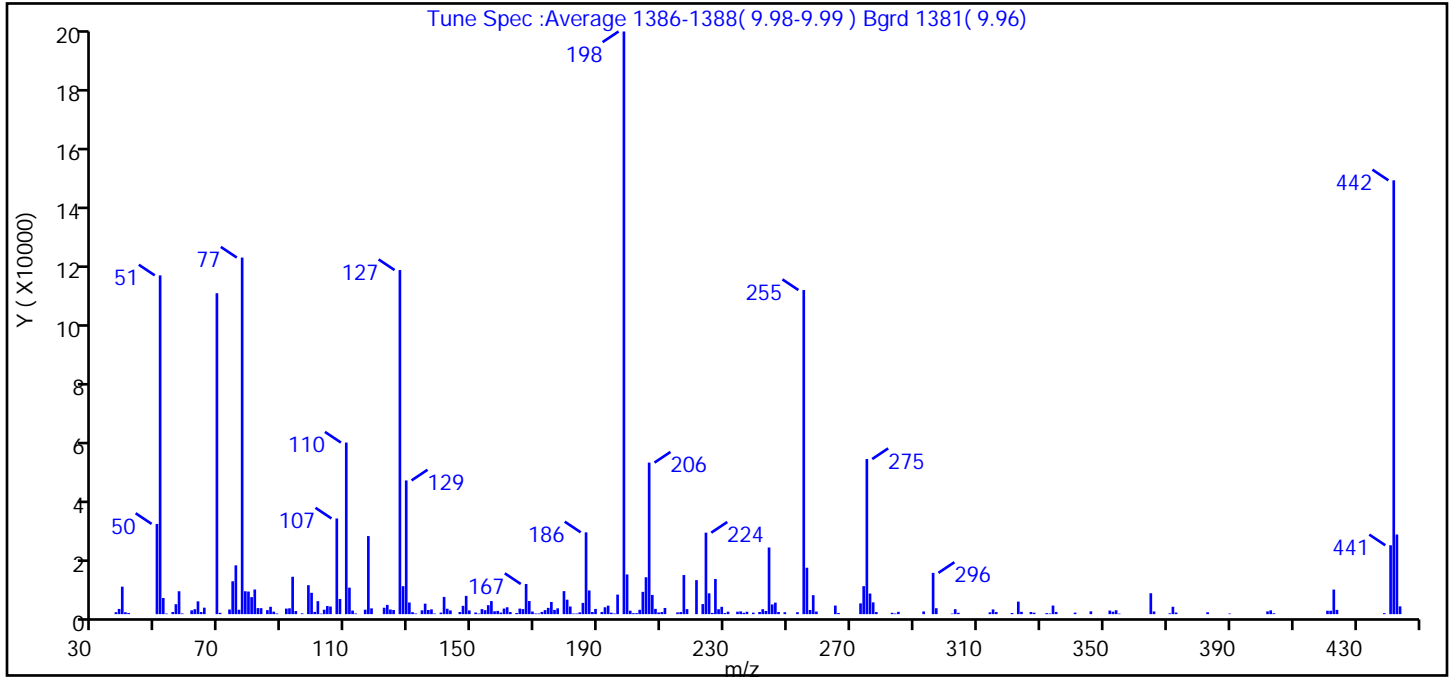
Reagents:

MB_DFTPP_WRK_00345 Amount Added: 1.00 Units: mL

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314029.D
 Injection Date: 07-Dec-2018 15:11:30 Instrument ID: HP5973U
 Lims ID: DFTPP
 Client ID:
 Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (134.3)
51	10-80% of the base peak	58.1
68	<2% of mass 69	0.0 (0.0)
69	Present	55.1
70	<2% of mass 69	0.2 (0.4)
127	10-80% of the base peak	59.1
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.8
275	10-60% of the base peak	26.6
365	>1% of mass 198	3.6
441	present but <24% of mass 442	11.8 (15.9)
442	base peak, or >50% of 198	74.5
443	15-24% of mass 442	13.7 (18.4)

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314029.D\1,4_Dx_SIM_HP5973U.rslt\spec
 Injection Date: 07-Dec-2018 15:11:30
 Spectrum: Tune Spec :Average 1386-1388(9.98-9.99) Bgrd 1381(9.96)
 Base Peak: 198.00
 Minimum % Base Peak: 0
 Number of Points: 224

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	662	118.00	1979	185.00	3832	258.00	6478
38.00	1788	122.00	2192	186.00	27928	259.00	891
39.00	9381	123.00	3158	187.00	8078	265.00	2930
40.00	654	124.00	1582	188.00	726	266.00	392
41.00	407	125.00	1418	189.00	1780	273.00	3684
50.00	30800	127.00	117464	191.00	747	274.00	9552
51.00	115648	128.00	9549	192.00	2341	275.00	52952
52.00	5514	129.00	45648	193.00	2903	276.00	7040
53.00	193	130.00	3973	194.00	498	277.00	4018
55.00	739	131.00	676	195.00	214	278.00	700
56.00	3394	132.00	218	196.00	6670	283.00	470
57.00	7815	134.00	1312	198.00	198912	284.00	210
58.00	232	135.00	3584	199.00	13559	285.00	788
61.00	1297	136.00	1419	200.00	1174	293.00	922
62.00	1688	137.00	1636	201.00	335	296.00	14092
63.00	4369	138.00	200	202.00	337	297.00	2022
64.00	727	140.00	537	203.00	1483	302.00	177
65.00	2208	141.00	5877	204.00	7615	303.00	1691
69.00	109552	142.00	1846	205.00	12602	304.00	461
70.00	460	143.00	1276	206.00	51736	314.00	617
73.00	1575	146.00	736	207.00	6554	315.00	1620
74.00	11224	147.00	2839	208.00	1802	316.00	723
75.00	16664	148.00	6241	209.00	577	321.00	396
76.00	1498	149.00	1266	210.00	715	323.00	4276
77.00	121728	151.00	554	211.00	2109	324.00	799
78.00	7810	152.00	187	215.00	598	327.00	743
79.00	7717	153.00	1736	216.00	709	328.00	490
80.00	5816	154.00	1364	217.00	13349	332.00	361
81.00	8425	155.00	3064	218.00	1718	333.00	217
82.00	2064	156.00	4458	221.00	11608	334.00	2931
83.00	2042	157.00	982	223.00	3440	335.00	745
85.00	1372	158.00	1102	224.00	27816	341.00	520
86.00	2504	159.00	536	225.00	7108	346.00	957

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314029.D\1,4_Dx_SIM_HP5973U.rslt\spec

Injection Date: 07-Dec-2018 15:11:30

Spectrum: Tune Spec :Average 1386-1388(9.98-9.99) Bgrd 1381(9.96)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 224

m/z	Y	m/z	Y	m/z	Y	m/z	Y
87.00	850	160.00	1912	226.00	416	352.00	1223
88.00	228	161.00	2352	227.00	12003	353.00	831
91.00	1895	162.00	721	228.00	1683	354.00	1322
92.00	1994	164.00	386	229.00	2496	355.00	180
93.00	12761	165.00	1889	230.00	362	365.00	7144
94.00	1055	166.00	1726	231.00	839	366.00	916
96.00	262	167.00	10293	234.00	833	371.00	272
98.00	9884	168.00	4479	235.00	942	372.00	2515
99.00	7291	169.00	892	236.00	465	373.00	553
100.00	773	170.00	226	237.00	816	383.00	648
101.00	4433	171.00	221	239.00	516	390.00	201
102.00	172	172.00	761	241.00	726	402.00	931
103.00	1520	173.00	1379	242.00	1692	403.00	1295
104.00	2759	174.00	2145	243.00	1082	404.00	299
105.00	2599	175.00	4163	244.00	22752	421.00	1159
107.00	32664	176.00	1450	245.00	3321	422.00	1158
108.00	5179	177.00	1986	246.00	3929	423.00	8388
110.00	58576	179.00	7856	247.00	730	424.00	1448
111.00	9039	180.00	4937	249.00	658	439.00	345
112.00	1219	181.00	2609	253.00	663	441.00	23520
113.00	233	182.00	205	255.00	110640	442.00	148096
116.00	1524	183.00	208	256.00	15847	443.00	27184
117.00	26656	184.00	612	257.00	1427	444.00	2658

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314029.D
Injection Date: 07-Dec-2018 15:11:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

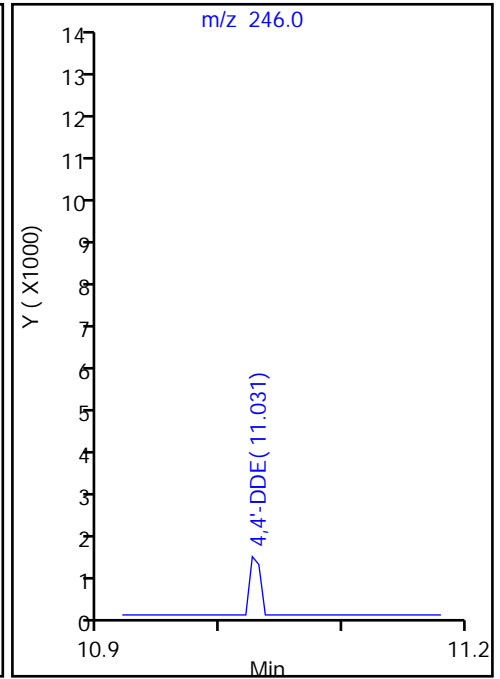
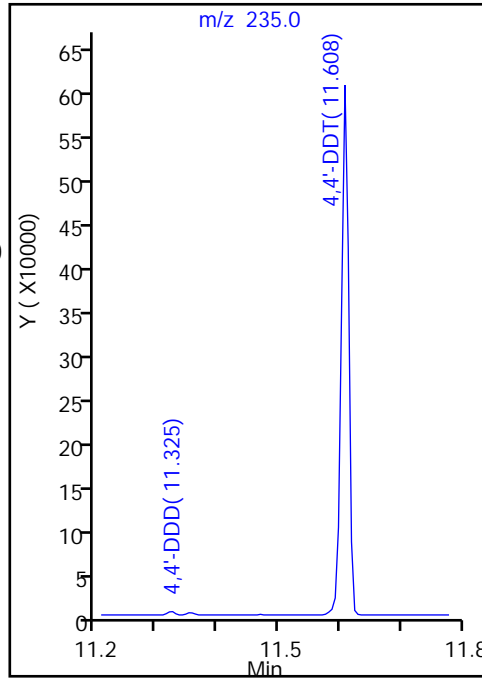
6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 517196
5 4,4'-DDD, Area = 3201
7 4,4'-DDE, Area = 832

%Breakdown: 0.77%, <= 20.00%
Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314397.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 27-Dec-2018 02:51:30 ALS Bottle#: 32 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:26 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 12:09:40

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	11.020	11.020	0.000	0	7310			NR
5 4,4'-DDD	235	11.320	11.320	0.000	96	27331			NR
6 4,4'-DDT	235	11.603	11.603	0.000	98	639686	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

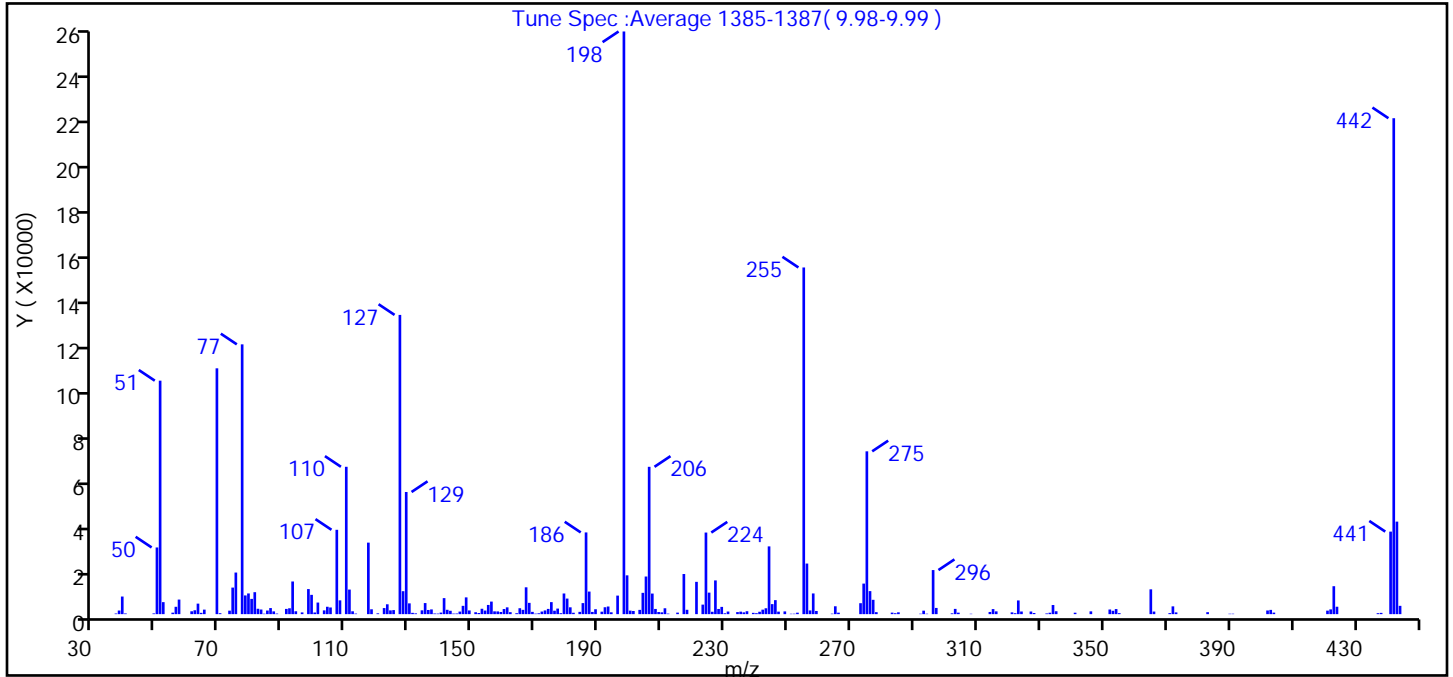
Reagents:

MB_DFTPP_WRK_00347 Amount Added: 1.00 Units: mL

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314397.D
 Injection Date: 27-Dec-2018 02:51:30 Instrument ID: HP5973U
 Lims ID: DFTPP
 Client ID:
 Operator ID: DR ALS Bottle#: 32 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (117.5)
51	10-80% of the base peak	40.1
68	<2% of mass 69	0.0 (0.0)
69	Present	42.2
70	<2% of mass 69	0.2 (0.4)
127	10-80% of the base peak	51.4
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.7
275	10-60% of the base peak	27.9
365	>1% of mass 198	4.3
441	present but <24% of mass 442	14.2 (16.6)
442	base peak, or >50% of 198	85.1
443	15-24% of mass 442	15.9 (18.7)

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314397.D\1,4_Dx_SIM_HP5973U.rslt\spec
 Injection Date: 27-Dec-2018 02:51:30
 Spectrum: Tune Spec :Average 1385-1387(9.98-9.99)
 Base Peak: 198.00
 Minimum % Base Peak: 0
 Number of Points: 232

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	287	127.00	132032	189.00	2167	273.00	4828
38.00	1593	128.00	10127	191.00	1086	274.00	13478
39.00	7769	129.00	53896	192.00	3045	275.00	71840
40.00	308	130.00	4754	193.00	3372	276.00	10161
49.00	325	131.00	579	194.00	810	277.00	6325
50.00	29424	132.00	347	196.00	8181	278.00	874
51.00	103016	134.00	1685	198.00	257088	283.00	672
52.00	5295	135.00	4886	199.00	17120	284.00	410
55.00	652	136.00	1842	200.00	1552	285.00	807
56.00	3243	137.00	2086	201.00	1389	292.00	189
57.00	6430	138.00	288	203.00	1880	293.00	1532
61.00	1263	139.00	242	204.00	9396	294.00	185
62.00	1712	140.00	683	205.00	16600	296.00	19448
63.00	4640	141.00	7069	206.00	65008	297.00	2741
64.00	578	142.00	1919	207.00	9081	302.00	358
65.00	1995	143.00	1484	208.00	2291	303.00	2319
69.00	108464	144.00	250	209.00	934	304.00	653
70.00	415	145.00	281	210.00	797	308.00	167
73.00	1535	146.00	1132	211.00	2594	314.00	964
74.00	11716	147.00	3662	212.00	234	315.00	2235
75.00	18352	148.00	7397	215.00	674	316.00	1229
77.00	119040	149.00	1634	217.00	17704	321.00	784
78.00	8256	151.00	839	218.00	1920	322.00	424
79.00	9133	152.00	493	221.00	14254	323.00	6047
80.00	6729	153.00	2374	223.00	4204	324.00	1166
81.00	9689	154.00	1583	224.00	36000	327.00	1162
82.00	2372	155.00	4057	225.00	9490	328.00	502
83.00	2040	156.00	5541	226.00	1049	332.00	310
84.00	193	157.00	1232	227.00	14880	333.00	627
85.00	1595	158.00	1203	228.00	2286	334.00	4026
86.00	2682	159.00	954	229.00	3201	335.00	1283
87.00	1220	160.00	2261	230.00	382	341.00	633
88.00	253	161.00	2997	231.00	1150	346.00	1234

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314397.D\1,4_Dx_SIM_HP5973U.rslt\spec

Injection Date: 27-Dec-2018 02:51:30

Spectrum: Tune Spec :Average 1385-1387(9.98-9.99)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 232

m/z	Y	m/z	Y	m/z	Y	m/z	Y
91.00	2310	162.00	866	234.00	905	352.00	2046
92.00	2591	164.00	413	235.00	1097	353.00	1479
93.00	14409	165.00	2612	236.00	789	354.00	2241
94.00	1274	166.00	1895	237.00	1284	355.00	441
96.00	761	167.00	11844	239.00	577	365.00	10946
98.00	11061	168.00	4981	240.00	423	366.00	1144
99.00	8511	169.00	1004	241.00	1054	371.00	447
100.00	722	170.00	221	242.00	1975	372.00	3435
101.00	5114	171.00	374	243.00	2595	373.00	772
103.00	1662	172.00	1145	244.00	29896	383.00	872
104.00	3256	173.00	1636	245.00	4424	390.00	175
105.00	2945	174.00	2306	246.00	6177	391.00	187
107.00	37216	175.00	5305	247.00	1105	402.00	1617
108.00	6084	176.00	1512	249.00	1210	403.00	1877
110.00	65016	177.00	2453	251.00	175	404.00	672
111.00	10844	178.00	418	252.00	195	421.00	1549
112.00	1261	179.00	9115	253.00	648	422.00	2098
113.00	251	180.00	6869	255.00	152960	423.00	12328
117.00	31552	181.00	3016	256.00	22320	424.00	3270
118.00	2144	182.00	615	257.00	1636	437.00	429
120.00	356	184.00	1006	258.00	9131	438.00	563
122.00	2680	185.00	4869	259.00	1396	441.00	36416
123.00	4350	186.00	36056	264.00	213	442.00	218816
124.00	1660	187.00	9962	265.00	3472	443.00	40824
125.00	1790	188.00	981	266.00	654	444.00	3666

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314397.D

Injection Date: 27-Dec-2018 02:51:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 32

Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

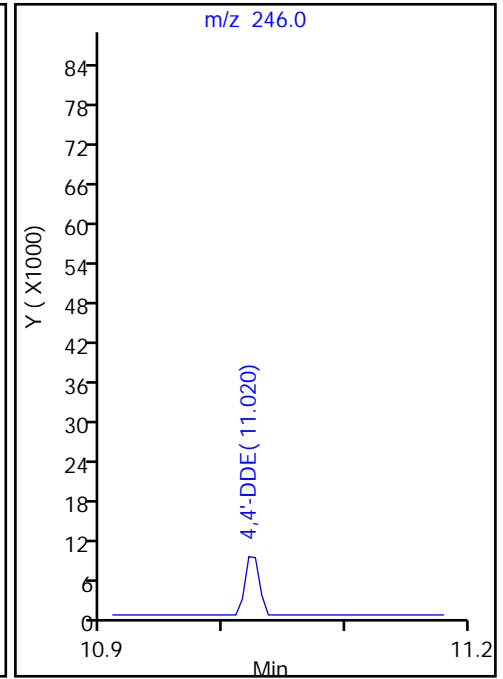
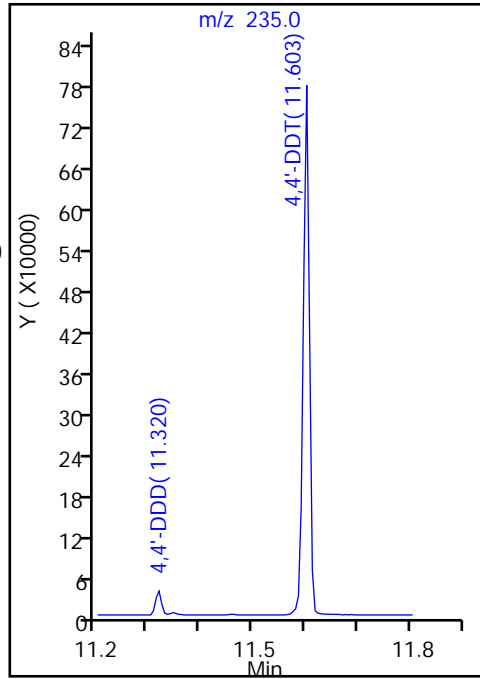
6 4,4'-DDT, Area = 639686

5 4,4'-DDD, Area = 27331

7 4,4'-DDE, Area = 7310

%Breakdown: 5.14%, <= 20.00%

Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314428.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 27-Dec-2018 15:48:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077606-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 28-Dec-2018 11:56:36 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0316

First Level Reviewer: richardsd Date: 27-Dec-2018 17:00:58

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	11.020	11.020	0.000	0	5264			NR
5 4,4'-DDD	235	11.320	11.320	0.000	97	47570			NR
6 4,4'-DDT	235	11.603	11.603	0.000	99	563185	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

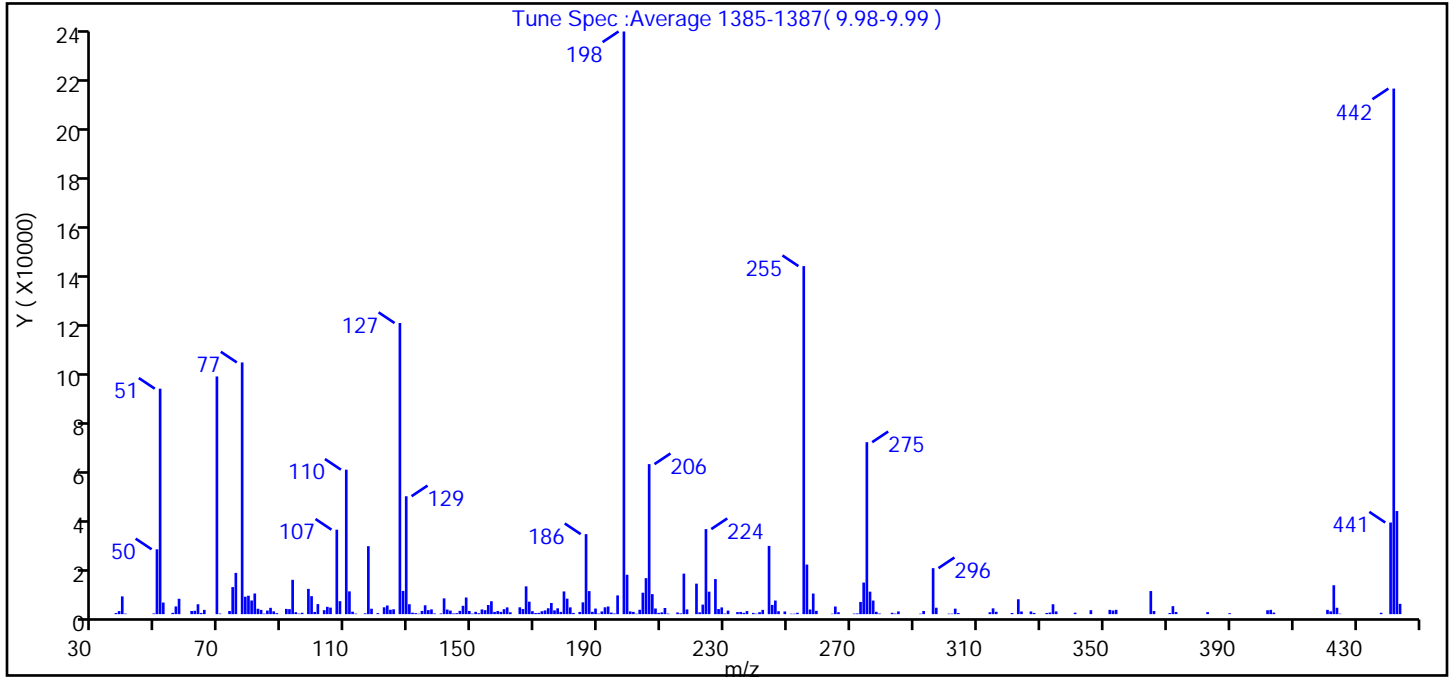
Reagents:

MB_DFTPP_WRK_00347 Amount Added: 1.00 Units: mL

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314428.D
 Injection Date: 27-Dec-2018 15:48:30 Instrument ID: HP5973U
 Lims ID: DFTPP
 Client ID:
 Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (110.9)
51	10-80% of the base peak	38.7
68	<2% of mass 69	0.0 (0.0)
69	Present	40.8
70	<2% of mass 69	0.1 (0.2)
127	10-80% of the base peak	50.0
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.8
275	10-60% of the base peak	29.5
365	>1% of mass 198	4.0
441	present but <24% of mass 442	15.7 (17.4)
442	base peak, or >50% of 198	90.2
443	15-24% of mass 442	17.7 (19.6)

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314428.D\1,4_Dx_SIM_HP5973U.rslt\spec
 Injection Date: 27-Dec-2018 15:48:30
 Spectrum: Tune Spec :Average 1385-1387(9.98-9.99)
 Base Peak: 198.00
 Minimum % Base Peak: 0
 Number of Points: 236

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	446	125.00	1958	189.00	2232	265.00	3057
38.00	1209	127.00	116488	190.00	206	266.00	763
39.00	7104	128.00	9291	191.00	1083	271.00	229
40.00	206	129.00	47176	192.00	2738	272.00	285
49.00	283	130.00	3968	193.00	3071	273.00	4876
50.00	25944	131.00	578	194.00	634	274.00	12644
51.00	90216	132.00	407	195.00	265	275.00	68808
52.00	4637	133.00	173	196.00	7503	276.00	9005
55.00	536	134.00	1293	198.00	233152	277.00	5427
56.00	3089	135.00	3540	199.00	15762	278.00	934
57.00	6142	136.00	1610	200.00	1109	279.00	246
61.00	1256	137.00	1922	201.00	915	283.00	546
62.00	1346	138.00	276	202.00	176	284.00	210
63.00	3962	140.00	278	203.00	1752	285.00	1086
64.00	483	141.00	6310	204.00	8581	292.00	187
65.00	1706	142.00	1847	205.00	14408	293.00	1265
69.00	95104	143.00	1426	206.00	60032	296.00	18400
70.00	233	144.00	287	207.00	8008	297.00	2574
73.00	1259	145.00	389	208.00	2259	301.00	200
74.00	10825	146.00	1311	209.00	505	302.00	186
75.00	16504	147.00	3343	210.00	718	303.00	2196
77.00	100720	148.00	6666	211.00	2465	304.00	436
78.00	6976	149.00	1280	212.00	234	314.00	763
79.00	7371	150.00	206	215.00	662	315.00	2317
80.00	5464	151.00	924	216.00	302	316.00	949
81.00	8266	152.00	372	217.00	16215	321.00	460
82.00	2157	153.00	1893	218.00	1886	323.00	5961
83.00	1708	154.00	1607	221.00	12206	324.00	1070
84.00	194	155.00	3656	222.00	721	327.00	1074
85.00	1440	156.00	5167	223.00	3819	328.00	491
86.00	2528	157.00	900	224.00	34032	332.00	477
87.00	1120	158.00	1237	225.00	8995	333.00	651
88.00	395	159.00	915	227.00	14044	334.00	3958

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314428.D\1,4_Dx_SIM_HP5973U.rslt\spec

Injection Date: 27-Dec-2018 15:48:30

Spectrum: Tune Spec :Average 1385-1387(9.98-9.99)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 236

m/z	Y	m/z	Y	m/z	Y	m/z	Y
91.00	2100	160.00	1998	228.00	2037	335.00	1094
92.00	2012	161.00	2700	229.00	2695	341.00	592
93.00	13737	162.00	743	230.00	226	346.00	1574
94.00	787	165.00	2734	231.00	1425	352.00	1719
95.00	199	166.00	2049	234.00	817	353.00	1454
96.00	545	167.00	11122	235.00	884	354.00	1725
98.00	10104	168.00	4989	236.00	522	365.00	9238
99.00	7195	169.00	1173	237.00	1218	366.00	1264
100.00	882	170.00	444	239.00	498	371.00	436
101.00	4022	171.00	513	240.00	183	372.00	3202
103.00	1594	172.00	1168	241.00	786	373.00	869
104.00	2927	173.00	1487	242.00	1706	383.00	830
105.00	2611	174.00	2354	244.00	27296	390.00	369
107.00	33800	175.00	4465	245.00	3691	402.00	1557
108.00	5196	176.00	1505	246.00	5448	403.00	1725
110.00	57808	177.00	2340	247.00	1165	404.00	617
111.00	9116	178.00	897	249.00	1070	421.00	1712
112.00	985	179.00	9089	251.00	175	422.00	1123
113.00	220	180.00	6190	252.00	183	423.00	11566
116.00	335	181.00	2712	253.00	555	424.00	2556
117.00	27192	182.00	496	255.00	139264	425.00	169
118.00	2163	184.00	882	256.00	19840	438.00	545
120.00	410	185.00	4722	257.00	1871	441.00	36664
122.00	2734	186.00	32016	258.00	8247	442.00	210304
123.00	3461	187.00	9223	259.00	1316	443.00	41256
124.00	1757	188.00	940	264.00	171	444.00	4121

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181227-77606.b\U3314428.D

Injection Date: 27-Dec-2018 15:48:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2

Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

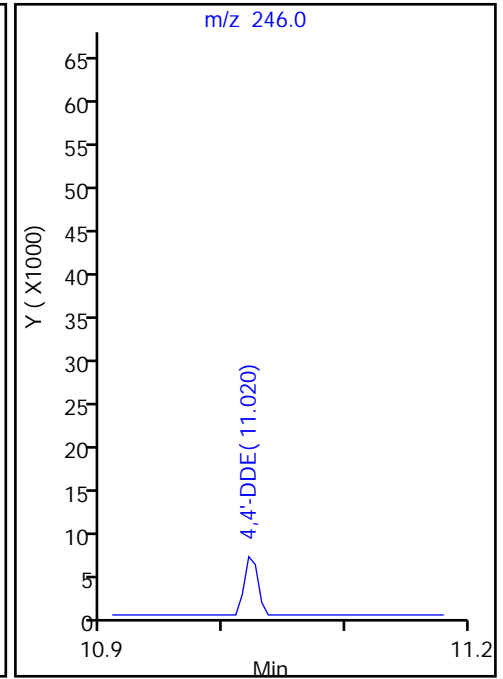
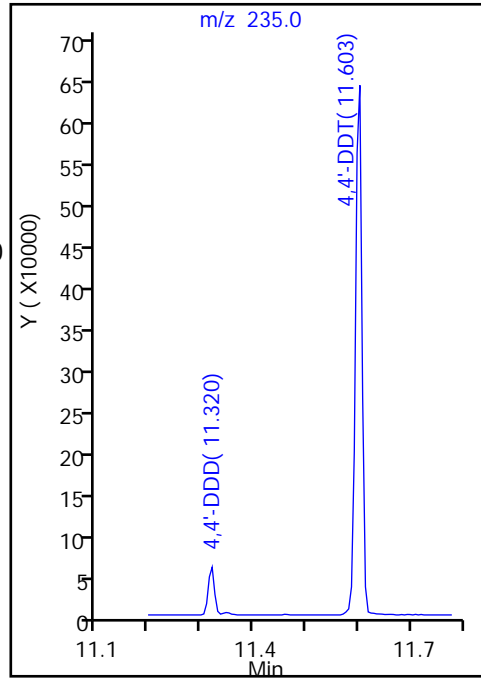
6 4,4'-DDT, Area = 563185

5 4,4'-DDD, Area = 47570

7 4,4'-DDE, Area = 5264

%Breakdown: 8.58%, <= 20.00%

Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 480-452286/1-A
 Matrix: Water Lab File ID: U3314409.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 07:43
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452523 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	35		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314409.D
 Lims ID: MB 480-452286/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 27-Dec-2018 07:43:30 ALS Bottle#: 44 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-014
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:27 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 13:38:05

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.844	2.746	0.098	90	132959	10.0	3.49	
3 1,4-Dioxane	88		2.790					ND	U
* 2 1,4-Dichlorobenzene-d4	152	5.948	5.944	0.004	99	318524	4.00	4.00	

QC Flag Legend

Review Flags
U - Marked Undetected

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314409.D

Injection Date: 27-Dec-2018 07:43:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: MB 480-452286/1-A

Worklist Smp#: 14

Client ID:

Injection Vol: 1.0 ul

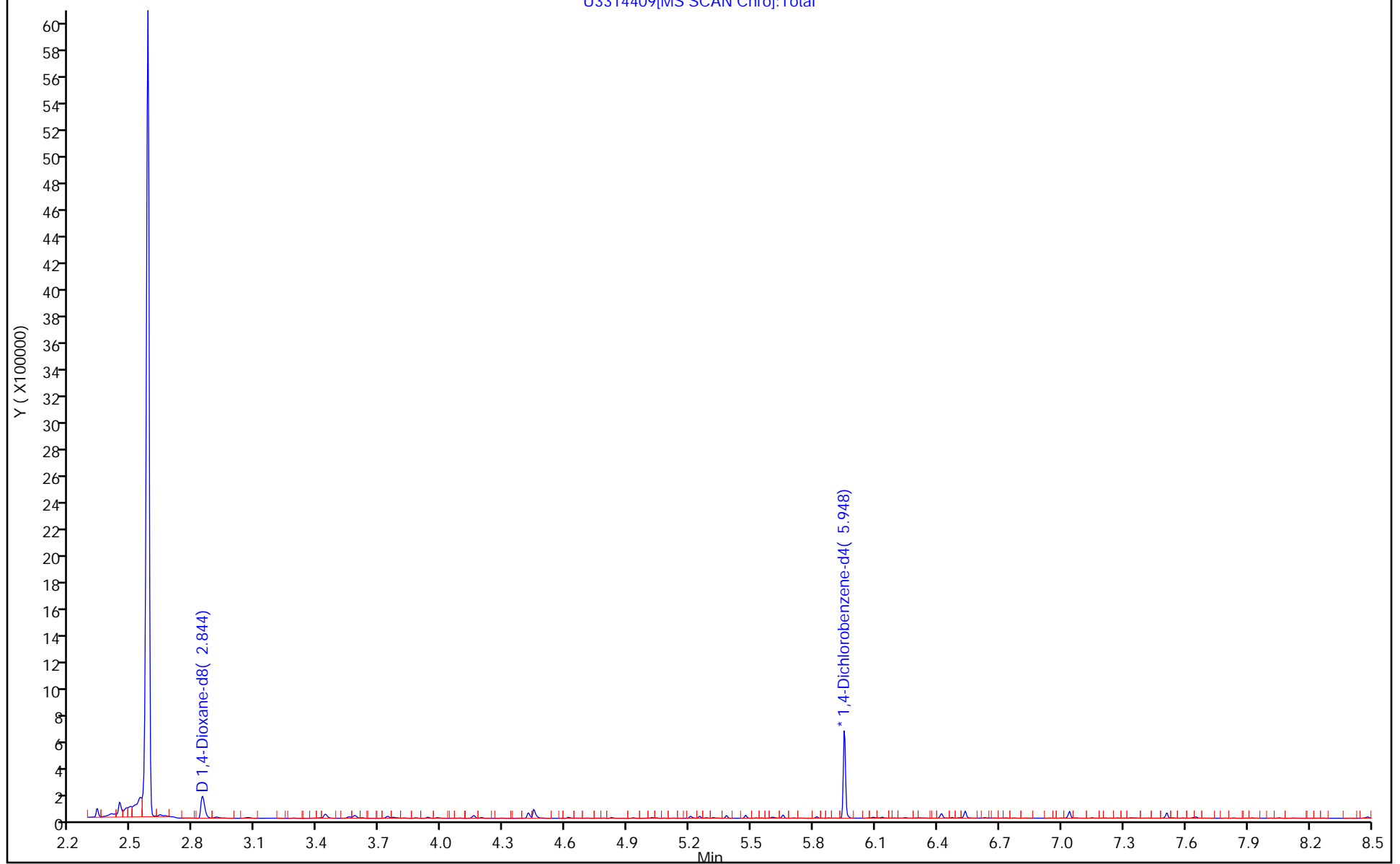
Dil. Factor: 1.0000

ALS Bottle#: 44

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314409[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314409.D

Injection Date: 27-Dec-2018 07:43:30

Instrument ID: HP5973U

Lims ID: MB 480-452286/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 44

Worklist Smp#: 14

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

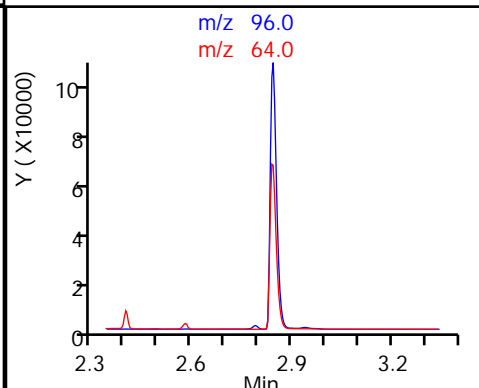
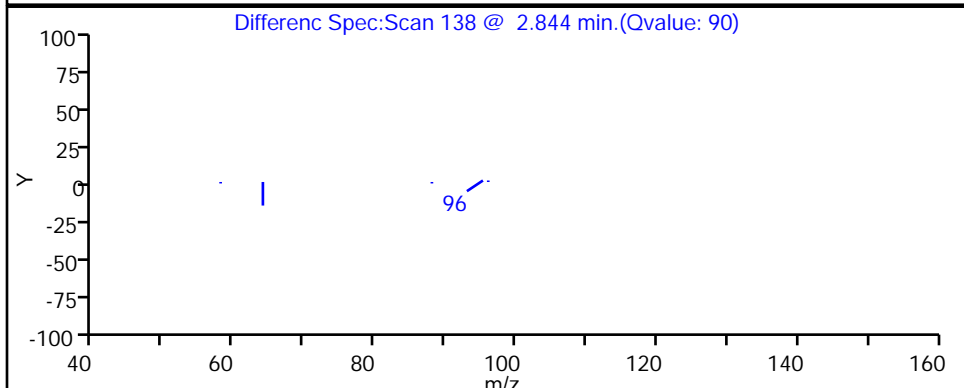
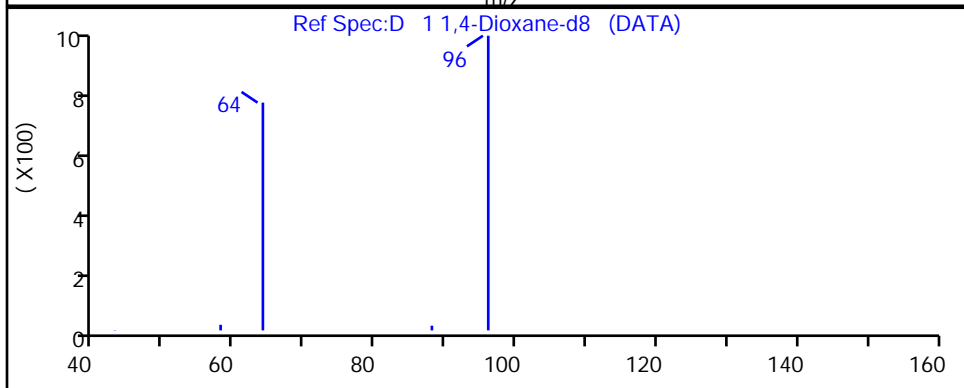
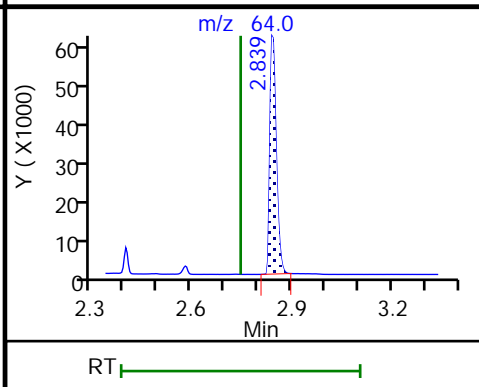
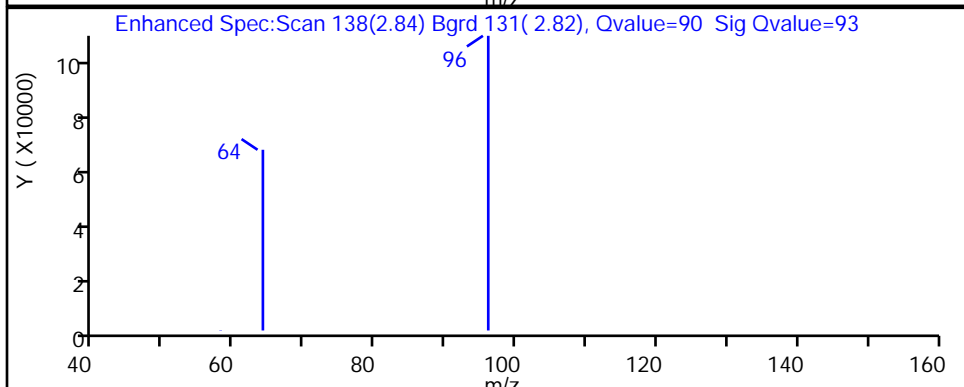
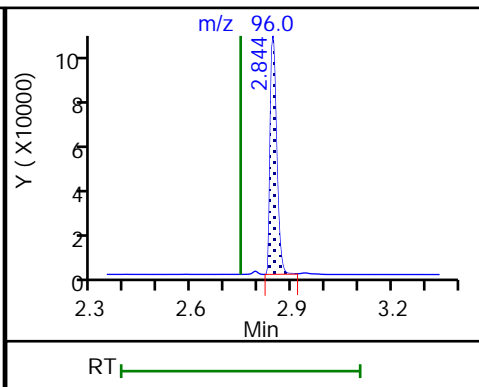
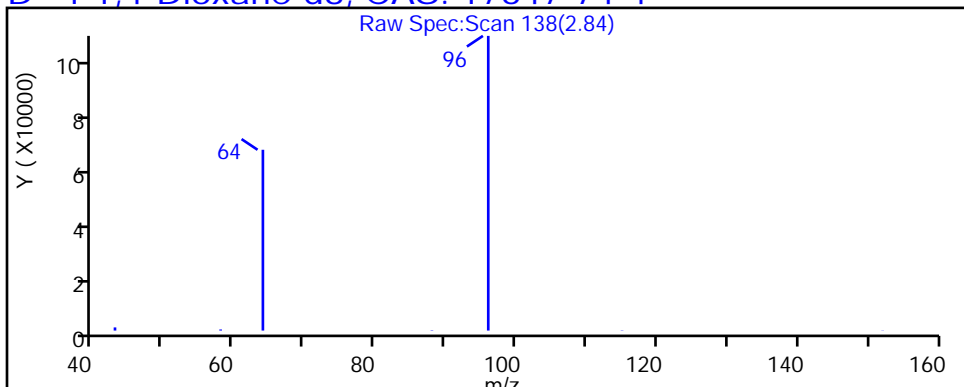
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4



TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314409.D

Injection Date: 27-Dec-2018 07:43:30

Instrument ID: HP5973U

Lims ID: MB 480-452286/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 44

Worklist Smp#: 14

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

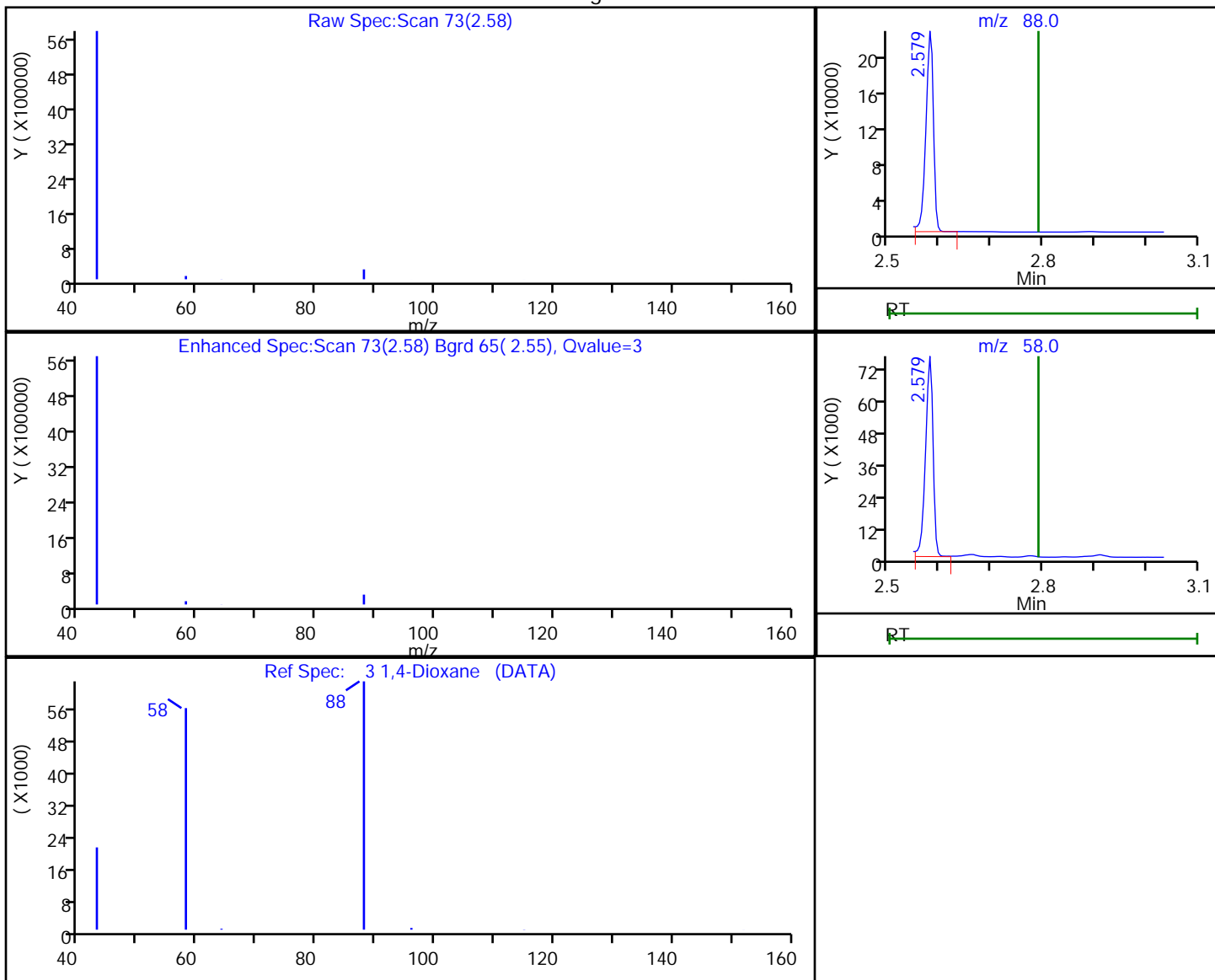
Column:

Detector

MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.58	88.00	232622	16.458662
2.58	58.00	77173	

Reviewer: richardsd, 27-Dec-2018 13:38:04

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 480-452286/2-A
 Matrix: Water Lab File ID: U3314410.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 08:07
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452523 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.13		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	34		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314410.D
 Lims ID: LCS 480-452286/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 27-Dec-2018 08:07:30 ALS Bottle#: 45 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-015
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:27 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 13:38:08

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.888	2.746	0.142	93	126788	10.0	3.38	
3 1,4-Dioxane	88	2.929	2.790	0.139	89	15273	1.00	1.13	
* 2 1,4-Dichlorobenzene-d4	152	5.952	5.944	0.008	99	313280	4.00	4.00	

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314410.D

Injection Date: 27-Dec-2018 08:07:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: LCS 480-452286/2-A

Worklist Smp#: 15

Client ID:

Injection Vol: 1.0 ul

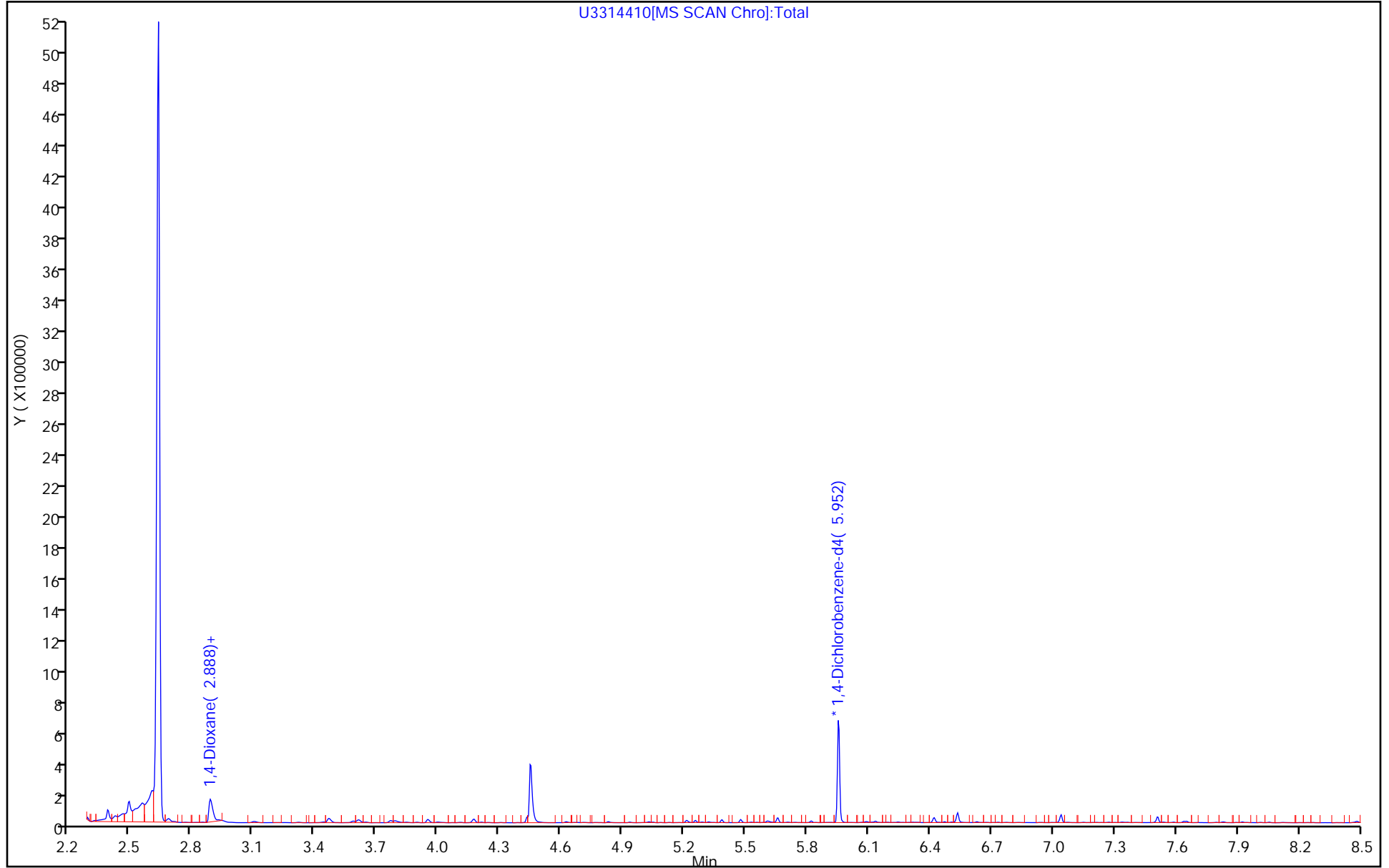
Dil. Factor: 1.0000

ALS Bottle#: 45

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314410[MS SCAN Chro]:Total



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 MS Lab Sample ID: 480-147040-3 MS
 Matrix: Water Lab File ID: U3314411.D
 Analysis Method: 8270D SIM ID Date Collected: 12/19/2018 12:00
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 08:31
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452523 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.52		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	31		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314411.D
 Lims ID: 480-147040-D-3-A MS
 Client ID: MW-09-121918
 Sample Type: MS
 Inject. Date: 27-Dec-2018 08:31:30 ALS Bottle#: 46 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-016
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:27 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 13:38:15

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.876	2.746	0.130	95	115223	10.0	3.11	a
3 1,4-Dioxane	88	2.921	2.790	0.131	87	18655	1.00	1.52	E
* 2 1,4-Dichlorobenzene-d4	152	5.952	5.944	0.008	98	308867	4.00	4.00	
7 4,4'-DDE	246		11.020					ND	
5 4,4'-DDD	235		11.320					ND	
6 4,4'-DDT	235		11.603					ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314411.D

Injection Date: 27-Dec-2018 08:31:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-147040-D-3-A MS

Worklist Smp#: 16

Client ID: MW-09-121918

Injection Vol: 1.0 ul

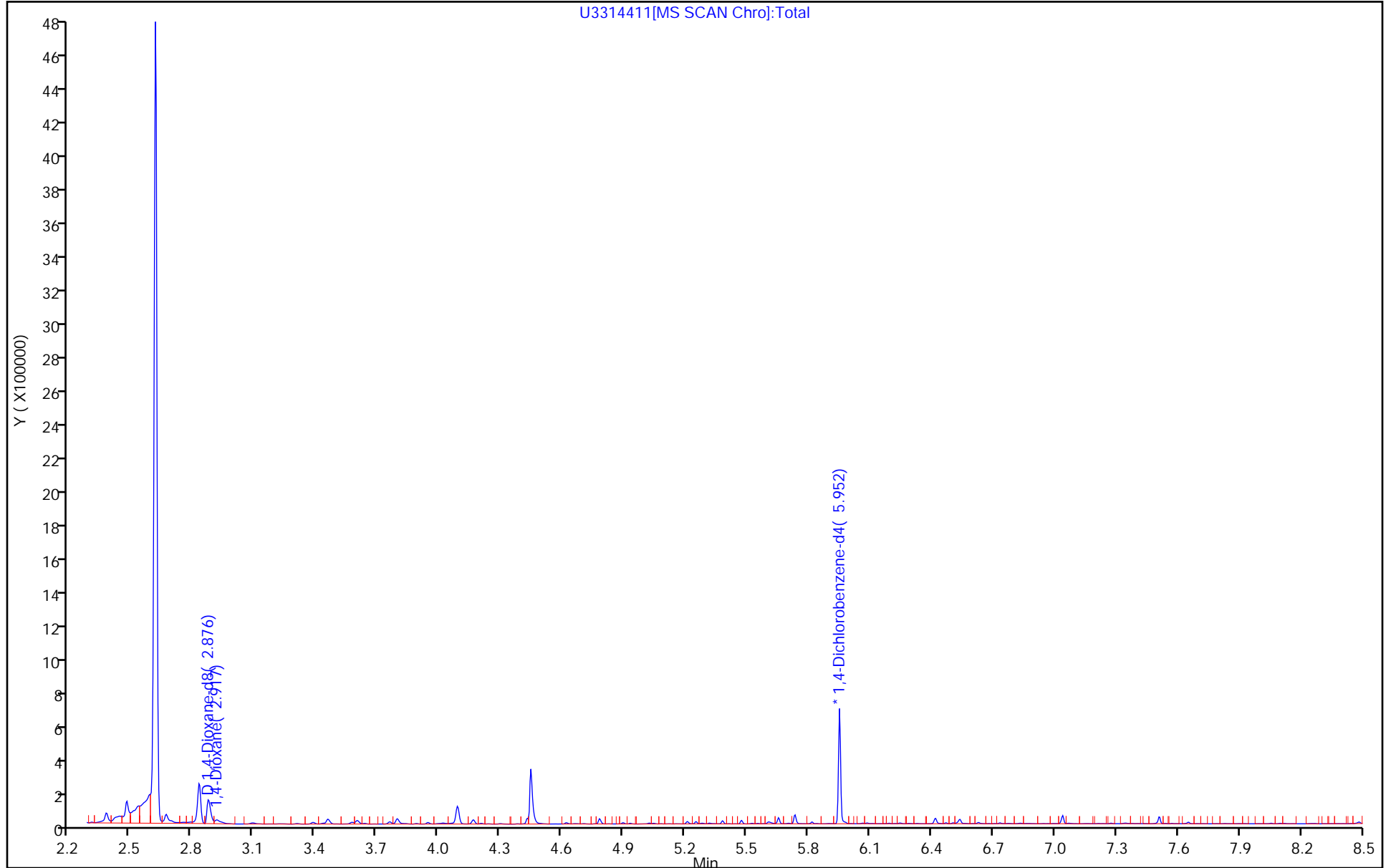
Dil. Factor: 1.0000

ALS Bottle#: 46

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314411[MS SCAN Chro]:Total



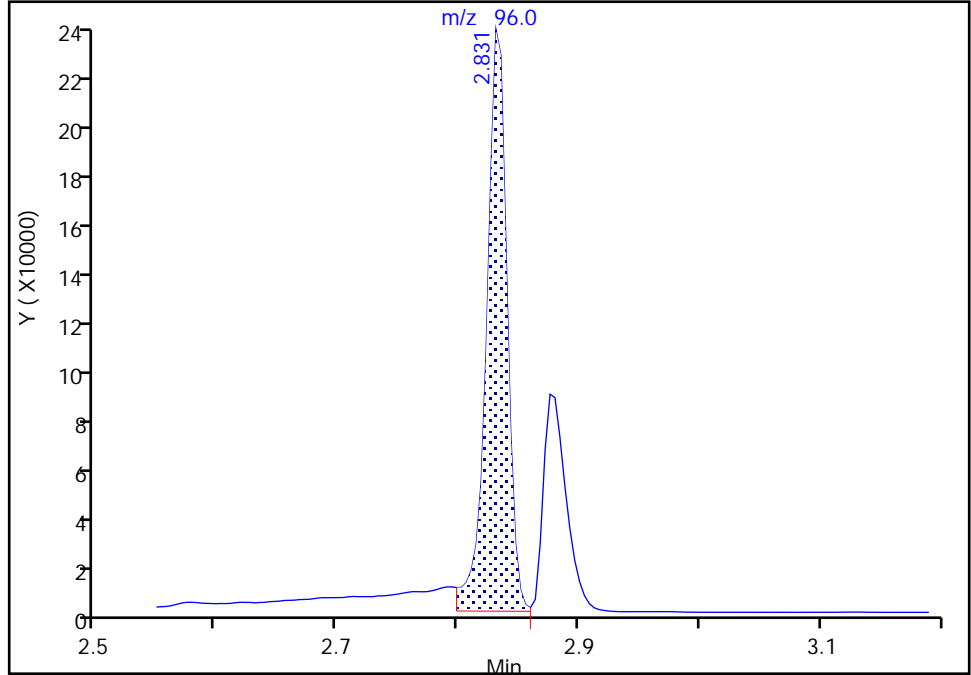
TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314411.D
Injection Date: 27-Dec-2018 08:31:30 Instrument ID: HP5973U
Lims ID: 480-147040-D-3-A MS
Client ID: MW-09-121918
Operator ID: DR ALS Bottle#: 46 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4
Signal: 1

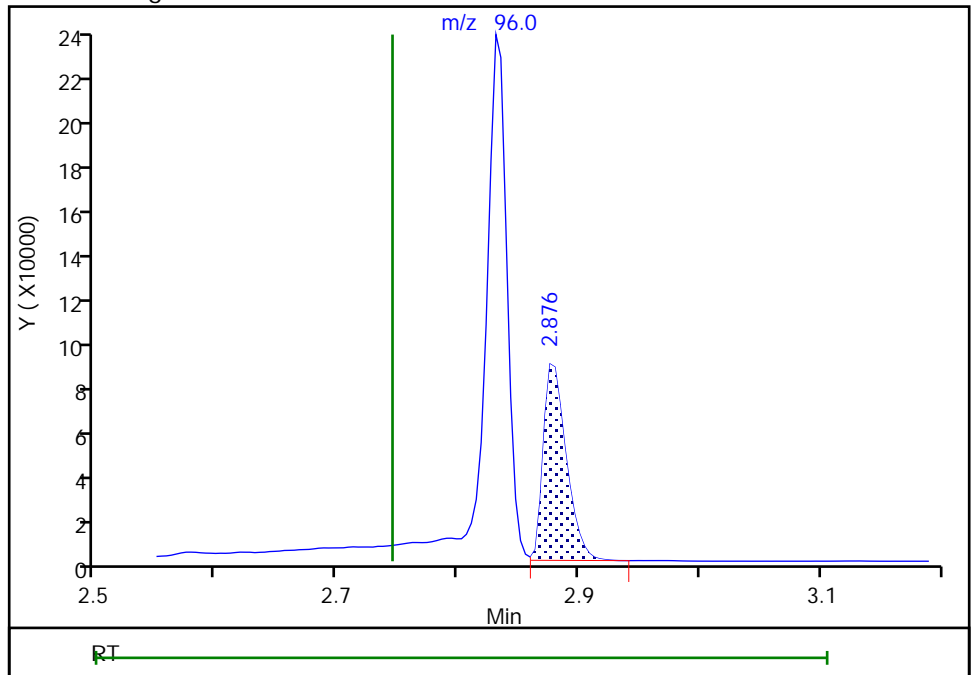
RT: 2.83
Area: 274791
Amount: 7.427991
Amount Units: ng/ul

Processing Integration Results



RT: 2.88
Area: 115223
Amount: 3.114641
Amount Units: ng/ul

Manual Integration Results



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 MSD Lab Sample ID: 480-147040-3 MSD
 Matrix: Water Lab File ID: U3314412.D
 Analysis Method: 8270D SIM ID Date Collected: 12/19/2018 12:00
 Extract. Method: 3510C Date Extracted: 12/23/2018 16:27
 Sample wt/vol: 1000 (mL) Date Analyzed: 12/27/2018 08:55
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 452523 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.47		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	28		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314412.D
 Lims ID: 480-147040-D-3-B MSD
 Client ID: MW-09-121918
 Sample Type: MSD
 Inject. Date: 27-Dec-2018 08:55:30 ALS Bottle#: 47 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0077575-017
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Dec-2018 13:41:27 Calib Date: 07-Dec-2018 17:41:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Buffalo\ChromData\HP5973U\20181206-77050.b\U3314035.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0307

First Level Reviewer: richardsd Date: 27-Dec-2018 13:38:20

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.880	2.746	0.134	95	107757	10.0	2.78	a
3 1,4-Dioxane	88	2.917	2.790	0.127	90	16805	1.00	1.47	E
* 2 1,4-Dichlorobenzene-d4	152	5.952	5.944	0.008	98	324167	4.00	4.00	
7 4,4'-DDE	246		11.020					ND	
5 4,4'-DDD	235		11.320					ND	
6 4,4'-DDT	235		11.603					ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00160 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314412.D

Injection Date: 27-Dec-2018 08:55:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-147040-D-3-B MSD

Worklist Smp#: 17

Client ID: MW-09-121918

Injection Vol: 1.0 ul

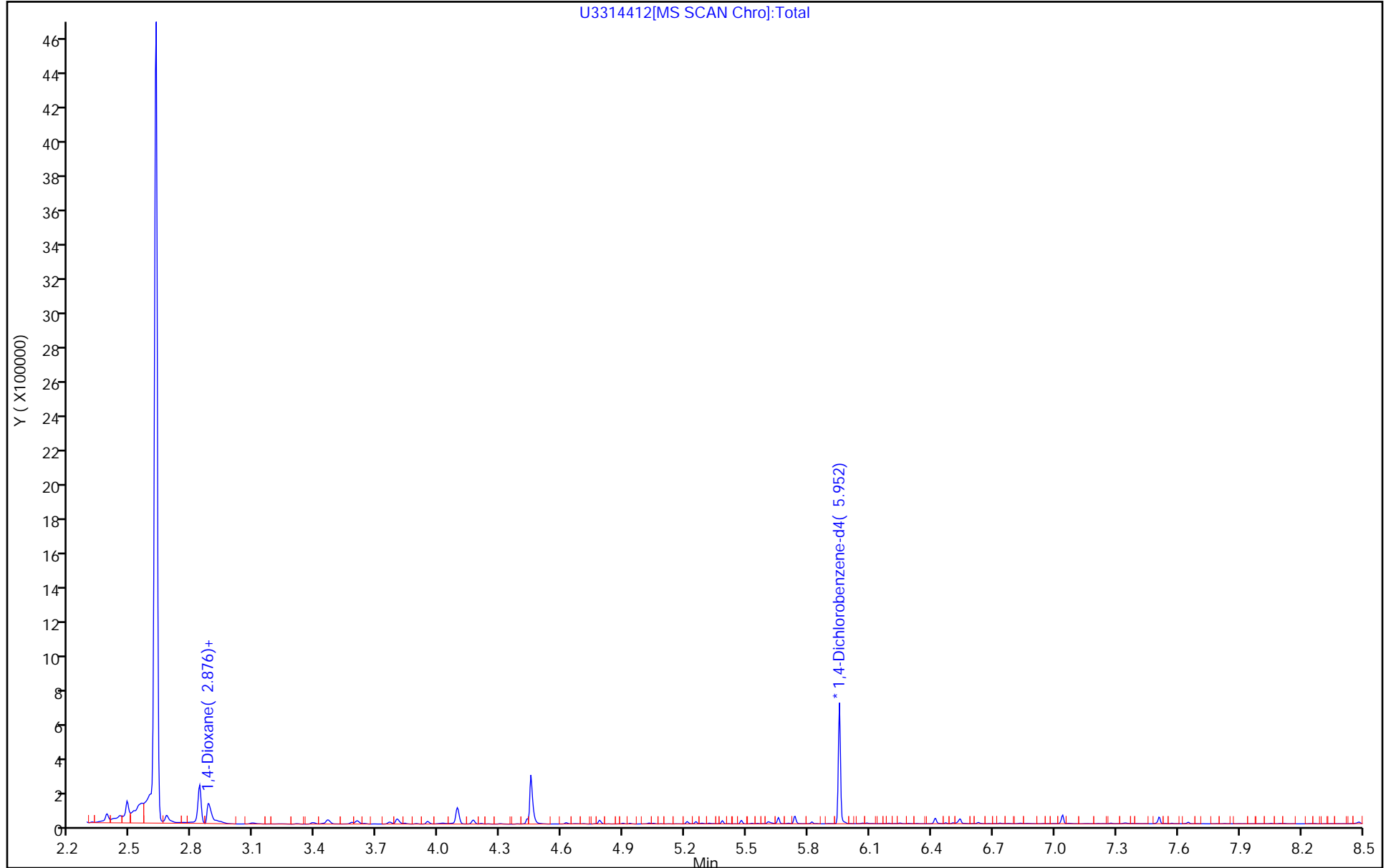
Dil. Factor: 1.0000

ALS Bottle#: 47

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3314412[MS SCAN Chro]:Total



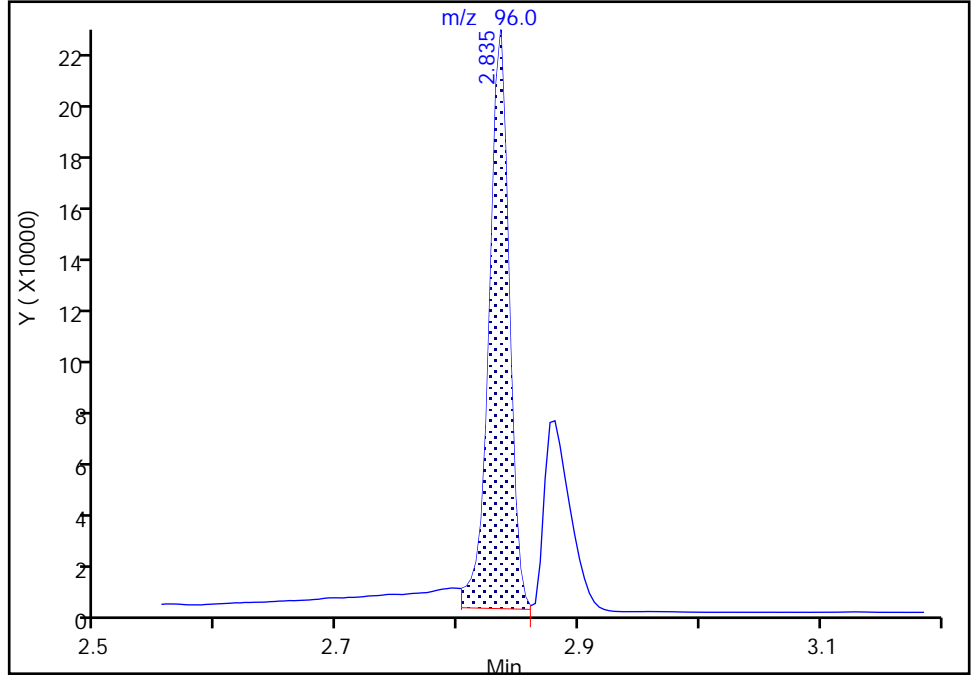
TestAmerica Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973U\20181226-77575.b\U3314412.D
Injection Date: 27-Dec-2018 08:55:30 Instrument ID: HP5973U
Lims ID: 480-147040-D-3-B MSD
Client ID: MW-09-121918
Operator ID: DR ALS Bottle#: 47 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4
Signal: 1

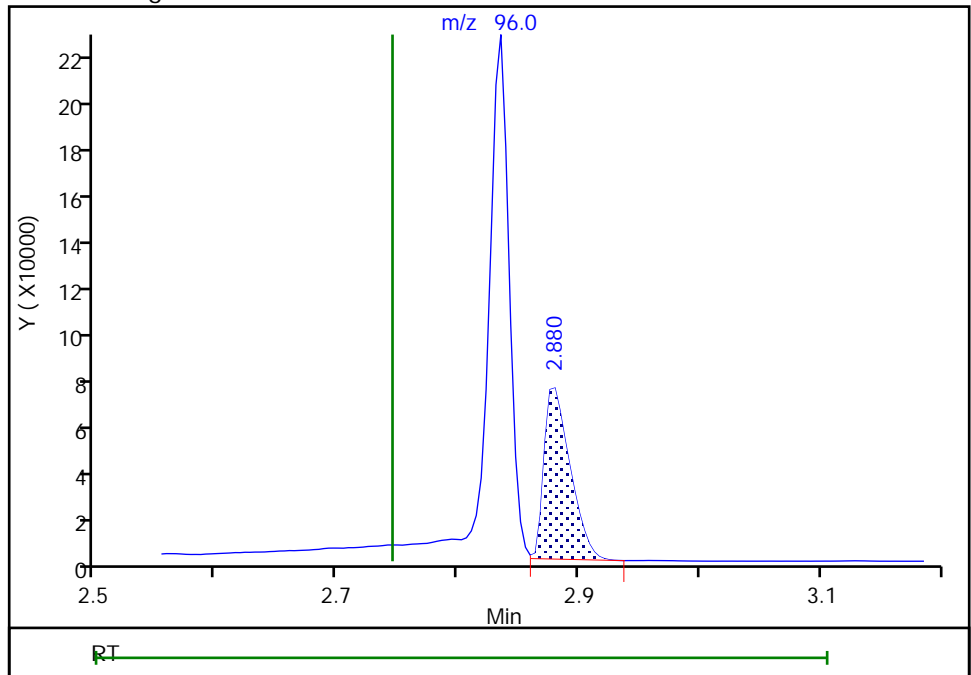
RT: 2.84
Area: 252484
Amount: 6.502875
Amount Units: ng/ul

Processing Integration Results



RT: 2.88
Area: 107757
Amount: 2.775345
Amount Units: ng/ul

Manual Integration Results



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1

SDG No.: _____

Instrument ID: HP5973U Start Date: 12/07/2018 15:11Analysis Batch Number: 449428 End Date: 12/07/2018 18:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-449428/2		12/07/2018 15:11	1	U3314029.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-449428/3		12/07/2018 15:39	1	U3314030.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-449428/4		12/07/2018 16:04	1	U3314031.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-449428/5		12/07/2018 16:28	1	U3314032.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-449428/6		12/07/2018 16:52	1	U3314033.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-449428/7		12/07/2018 17:17	1	U3314034.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-449428/8		12/07/2018 17:41	1	U3314035.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-449428/9		12/07/2018 18:05	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-147040-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 12/27/2018 02:51Analysis Batch Number: 452523End Date: 12/27/2018 14:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-452523/2		12/27/2018 02:51	1	U3314397.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-452523/3		12/27/2018 03:20	1	U3314398.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 03:44	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 04:08	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 04:32	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 04:56	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 05:20	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 05:44	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 06:08	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 06:32	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 06:56	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 07:19	1		RXI-5Sil MS(0.5 0.25 (mm))
MB 480-452286/1-A		12/27/2018 07:43	1	U3314409.D	RXI-5Sil MS(0.5 0.25 (mm))
LCS 480-452286/2-A		12/27/2018 08:07	1	U3314410.D	RXI-5Sil MS(0.5 0.25 (mm))
480-147040-3 MS		12/27/2018 08:31	1	U3314411.D	RXI-5Sil MS(0.5 0.25 (mm))
480-147040-3 MSD		12/27/2018 08:55	1	U3314412.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 09:19	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 09:43	1		RXI-5Sil MS(0.5 0.25 (mm))
480-147040-3		12/27/2018 10:07	1	U3314415.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 10:31	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 10:55	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 11:19	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 11:43	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 12:07	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 12:31	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 12:55	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 13:20	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 13:44	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 14:08	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1

SDG No.: _____

Instrument ID: HP5973U Start Date: 12/27/2018 15:48

Analysis Batch Number: 452764 End Date: 12/28/2018 03:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-452764/2		12/27/2018 15:48	1	U3314428.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-452764/3		12/27/2018 16:17	1	U3314429.D	RXI-5Sil MS(0.5 0.25 (mm))
480-147040-4		12/27/2018 16:41	1	U3314430.D	RXI-5Sil MS(0.5 0.25 (mm))
480-147040-5		12/27/2018 17:05	1	U3314431.D	RXI-5Sil MS(0.5 0.25 (mm))
480-147040-6		12/27/2018 17:30	1	U3314432.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 17:55	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 18:19	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 18:44	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 19:09	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 19:33	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 19:57	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 20:22	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 20:46	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 21:11	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 21:35	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 22:00	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 22:24	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 22:49	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 23:13	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/27/2018 23:38	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 00:02	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 00:27	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 00:51	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 01:16	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 01:41	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 02:05	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 02:30	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 02:54	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		12/28/2018 03:19	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-147040-1

SDG No.: _____

Batch Number: 452286 Batch Start Date: 12/23/18 16:27 Batch Analyst: Gruning, Anton T

Batch Method: 3510C Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	OP_SIM LCS 00005	OP_SimSurr 00012
MB 480-452286/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU		1 mL
LCS 480-452286/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-147040-D-3 MS	MW-09-121918	3510C, 8270D SIM ID	T	1000 mL	1 mL	6 SU	<2 SU	1 mL	1 mL
480-147040-D-3 MSD	MW-09-121918	3510C, 8270D SIM ID	T	1000 mL	1 mL	6 SU	<2 SU	1 mL	1 mL
480-147040-D-3	MW-09-121918	3510C, 8270D SIM ID	T	1000 mL	1 mL	6 SU	<2 SU		1 mL
480-147040-D-4	MW-10-121918	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-147040-C-5	MW-01R-121918	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-147040-D-6	FD-01-121918	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL

Batch Notes	
Acid Used for pH Adjustment ID	5019584
Analyst ID - Concentration	AG
Analyst ID - Extraction	AG
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	5051453
Prep Solvent ID	5074563
Prep Solvent Volume Used	180 mL
Analyst ID - Spike Analyst	AG
Analyst ID - Spike Witness Analyst	AG
Sufficient Volume for Batch QC	Yes
Vial Lot Number	1709111094

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFC_IDA

Fluorinated Alkyl Substances

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
	LCS 200-138726/2-A	81	117	119	88	78	105	145	84

	<u>QC LIMITS</u>
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3 PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4 PFHpA	25-150
PFHxS = 1802 PFHxS	25-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFOSA #
	LCS 200-138726/2-A	86	113	95	90	71	78	86	89

PFNA = 13C5 PFNA
 PFOS = 13C4 PFOS
 M282FTS = M2-8:2 FTS
 PFDA = 13C2 PFDA
 d3NMFOS = d3-NMeFOSAA
 d5NEFOS = d5-NEtFOSAA
 PFUnA = 13C2 PFUnA
 PFOSA = 13C8 FOSA

QC LIMITS

25-150
 25-150
 25-150
 25-150
 25-150
 25-150
 25-150
 25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFDa #	PFTDA #
	LCS 200-138726/2-A	73	59

PFDa = 13C2 PFDa
PFTDA = 13C2 PFTeDA

QC LIMITS
25-150
25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
FB-01-121918	480-147040-1	80	100	101	88	81	99	119	84
EB-01-121918	480-147040-2	74	95	81	84	82	95	125	84
MW-09-121918	480-147040-3	57	52	77	45 *	62	88	184 *	85
MW-10-121918	480-147040-4	25	32	68	35 *	58	96	251 *	78
MW-01R-121918	480-147040-5	78	70	94	60	66	102	142	70
FD-01-121918	480-147040-6	32	33	72	39 *	60	105	278 *	77
	MB 200-138726/1-A	73	103	105	84	78	105	146	80
MW-09-121918 MS	480-147040-3 MS	58	50	71	44 *	62	82	204 *	79
MW-09-121918 MSD	480-147040-3 MSD	57	58	72	44 *	61	91	196 *	78

QC LIMITS

PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3 PFBS	50-150
PFHxA = 13C2 PFHxA	50-150
PFHpA = 13C4 PFHpA	50-150
PFHxS = 18O2 PFHxS	50-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	50-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFOSA #
FB-01-121918	480-147040-1	79	93	86	85	63	71	80	50
EB-01-121918	480-147040-2	84	95	88	84	63	69	79	50
MW-09-121918	480-147040-3	86	103	120	93	62	78	94	64
MW-10-121918	480-147040-4	84	105	211 *	98	66	98	107	73
MW-01R-121918	480-147040-5	76	94	95	72	53	62	73	63
FD-01-121918	480-147040-6	86	115	218 *	105	82	96	107	84
	MB 200-138726/1-A	80	102	87	84	59	72	80	64
MW-09-121918 MS	480-147040-3 MS	85	94	125	91	71	81	91	60
MW-09-121918 MSD	480-147040-3 MSD	86	101	117	88	58	73	86	60

QC LIMITS

PFNA = 13C5 PFNA	50-150
PFOS = 13C4 PFOS	50-150
M282FTS = M2-8:2 FTS	25-150
PFDA = 13C2 PFDA	50-150
d3NMFOS = d3-NMeFOSAA	50-150
d5NEFOS = d5-NEtFOSAA	50-150
PFUnA = 13C2 PFUnA	50-150
PFOSA = 13C8 FOSA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): C-18 ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	PFDa #	PFTDA #
FB-01-121918	480-147040-1	67	53
EB-01-121918	480-147040-2	64	59
MW-09-121918	480-147040-3	84	76
MW-10-121918	480-147040-4	98	102
MW-01R-121918	480-147040-5	64	64
FD-01-121918	480-147040-6	100	105
	MB 200-138726/1-A	69	60
MW-09-121918 MS	480-147040-3 MS	85	79
MW-09-121918 MSD	480-147040-3 MSD	78	69

PFDa = 13C2 PFDa
PFTDA = 13C2 PFTeDA

QC LIMITS
50-150
50-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington

Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: PF010719A58.d

Lab ID: LCS 200-138726/2-A

Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.5	104	50-150	
Perfluoropentanoic acid (PFPeA)	40.0	29.2	73	50-150	
Perfluorohexanoic acid (PFHxA)	40.0	37.2	93	50-150	
Perfluoroheptanoic acid (PFHpA)	40.0	44.5	111	50-150	
Perfluorooctanoic acid (PFOA)	40.0	40.9	102	50-150	
Perfluorononanoic acid (PFNA)	40.0	33.5	84	50-150	
Perfluorodecanoic acid (PFDA)	40.0	37.2	93	50-150	
Perfluoroundecanoic acid (PFUnA)	40.0	41.4	104	50-150	
Perfluorododecanoic acid (PFDoA)	40.0	43.4	109	50-150	
Perfluorotridecanoic acid (PFTriA)	40.0	47.5	119	50-150	
Perfluorotetradecanoic acid (PFTeA)	40.0	39.1	98	50-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	26.6	75	50-150	
Perfluorohexanesulfonic acid (PFHxS)	36.4	27.1	74	50-150	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	34.6	91	50-150	
Perfluorooctanesulfonic acid (PFOS)	37.1	37.9	102	50-150	
Perfluorodecanesulfonic acid (PFDS)	38.6	36.6	95	50-150	
Perfluorooctanesulfonamide (PFOSA)	40.0	41.1	103	50-150	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	28.7	72	50-150	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	32.5	81	50-150	
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.9	40.0	106	50-150	
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	38.3	42.3	110	50-150	
18O2 PFHxS	94.6	98.9	105	25-150	
13C4 PFHpA	100	78.0	78	25-150	
13C4 PFOA	100	84.2	84	25-150	
13C4 PFOS	95.6	108	113	25-150	
13C5 PFNA	100	86.2	86	25-150	
13C4 PFBA	100	81.1	81	25-150	
13C2 PFHxA	100	87.8	88	25-150	
13C2 PFDA	100	90.2	90	25-150	
13C2 PFUnA	100	86.1	86	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: PF010719A58.d
 Lab ID: LCS 200-138726/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2 PFDoA	100	73.2	73	25-150	
13C8 FOSA	100	89.1	89	25-150	
13C5 PFPeA	100	117	117	25-150	
13C2 PFTeDA	100	58.6	59	25-150	
d3-NMeFOSAA	100	71.0	71	25-150	
d5-NEtFOSAA	100	78.1	78	25-150	
M2-6:2 FTS	95.0	138	145	25-150	
M2-8:2 FTS	95.8	90.6	95	25-150	
13C3 PFBS	93.0	111	119	25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Burlington

Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: PF010719A71.d

Lab ID: 480-147040-3 MS

Client ID: MW-09-121918 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	36.8	8.4	41.5	90	40-160	
Perfluoropentanoic acid (PFPeA)	36.8	12	43.5	86	40-160	
Perfluorohexanoic acid (PFHxA)	36.8	9.7	41.9	88	40-160	
Perfluoroheptanoic acid (PFHpA)	36.8	2.9	41.5	105	40-160	
Perfluorooctanoic acid (PFOA)	36.8	5.8	38.4	88	40-160	
Perfluorononanoic acid (PFNA)	36.8	0.57 J	30.3	81	40-160	
Perfluorodecanoic acid (PFDA)	36.8	ND	33.5	91	40-160	
Perfluoroundecanoic acid (PFUnA)	36.8	ND	35.8	97	40-160	
Perfluorododecanoic acid (PFDoA)	36.8	ND	36.5	99	40-160	
Perfluorotridecanoic acid (PFTriA)	36.8	ND	35.9	97	40-160	
Perfluorotetradecanoic acid (PFTeA)	36.8	ND	30.7	83	40-160	
Perfluorobutanesulfonic acid (PFBS)	32.5	1.6 J	30.4	89	40-160	
Perfluorohexanesulfonic acid (PFHxS)	33.5	0.28 J	27.5	81	40-160	
Perfluoroheptanesulfonic Acid (PFHpS)	35.0	ND	33.6	96	40-160	
Perfluorooctanesulfonic acid (PFOS)	34.1	2.3	37.8	104	40-160	
Perfluorodecanesulfonic acid (PFDS)	35.5	ND	35.1	99	40-160	
Perfluorooctanesulfonamide (PFOSA)	36.8	ND	34.2	93	40-160	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	36.8	ND	23.4	64	40-160	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	36.8	ND	26.9	73	40-160	
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	34.9	4.3 J	37.3	95	40-160	
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	35.2	ND	33.6	95	40-160	
18O2 PFHxS	87.0	70	71.4	82	50-150	
13C4 PFHpA	92.0	52	57.2	62	50-150	
13C4 PFOA	92.0	71	72.4	79	50-150	
13C4 PFOS	87.9	83	82.3	94	50-150	
13C5 PFNA	92.0	72	78.2	85	50-150	
13C4 PFBA	92.0	48	53.1	58	25-150	
13C2 PFHxA	92.0	38	40.5	44	50-150	*
13C2 PFDA	92.0	78	83.8	91	50-150	
13C2 PFUnA	92.0	79	83.8	91	50-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: PF010719A71.d
 Lab ID: 480-147040-3 MS Client ID: MW-09-121918 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
13C2 PFDoA	92.0	71	78.6	85	50-150	
13C8 FOSA	92.0	53	55.3	60	25-150	
13C5 PFPeA	92.0	44	45.6	50	25-150	
13C2 PFTeDA	92.0	64	72.8	79	50-150	
d3-NMeFOSAA	92.0	52	65.7	71	50-150	
d5-NEtFOSAA	92.0	65	74.3	81	50-150	
M2-6:2 FTS	87.4	150	178	204	25-150	*
M2-8:2 FTS	88.1	97	111	125	25-150	
13C3 PFBS	85.5	60	60.8	71	50-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington

Job No.: 480-147040-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: PF010719A72.d

Lab ID: 480-147040-3 MSD

Client ID: MW-09-121918 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	33.5	40.8	97	2	30	40-160	
Perfluoropentanoic acid (PFPeA)	33.5	39.0	80	11	30	40-160	
Perfluorohexanoic acid (PFHxA)	33.5	43.0	100	3	30	40-160	
Perfluoroheptanoic acid (PFHpA)	33.5	41.7	116	1	30	40-160	
Perfluorooctanoic acid (PFOA)	33.5	40.6	104	6	30	40-160	
Perfluorononanoic acid (PFNA)	33.5	30.3	89	0	30	40-160	
Perfluorodecanoic acid (PFDA)	33.5	33.3	99	1	30	40-160	
Perfluoroundecanoic acid (PFUnA)	33.5	35.4	106	1	30	40-160	
Perfluorododecanoic acid (PFDoA)	33.5	36.3	109	0	30	40-160	
Perfluorotridecanoic acid (PFTriA)	33.5	33.8	101	6	30	40-160	
Perfluorotetradecanoic acid (PFTeA)	33.5	30.6	91	0	30	40-160	
Perfluorobutanesulfonic acid (PFBS)	29.6	26.9	85	12	30	40-160	
Perfluorohexanesulfonic acid (PFHxS)	30.5	25.6	83	7	30	40-160	
Perfluoroheptanesulfonic Acid (PFHpS)	31.9	30.2	95	11	30	40-160	
Perfluorooctanesulfonic acid (PFOS)	31.1	33.7	101	12	30	40-160	
Perfluorodecanesulfonic acid (PFDS)	32.3	30.1	93	16	30	40-160	
Perfluorooctanesulfonamide (PFOSA)	33.5	35.0	104	2	30	40-160	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	33.5	27.1	81	15	30	40-160	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	33.5	28.1	84	5	30	40-160	
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	31.7	37.9	106	2	30	40-160	
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	32.1	34.6	108	3	30	40-160	
18O2 PFHxS	79.2	71.7	91			50-150	
13C4 PFHpA	83.7	51.2	61			50-150	
13C4 PFOA	83.7	65.5	78			50-150	
13C4 PFOS	80.0	80.7	101			50-150	
13C5 PFNA	83.7	71.9	86			50-150	
13C4 PFBA	83.7	47.6	57			25-150	
13C2 PFHxA	83.7	36.6	44			50-150	*
13C2 PFDA	83.7	73.9	88			50-150	
13C2 PFUnA	83.7	71.9	86			50-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: PF010719A72.d
 Lab ID: 480-147040-3 MSD Client ID: MW-09-121918 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C2 PFDoA	83.7	65.5	78			50-150	
13C8 FOSA	83.7	50.5	60			25-150	
13C5 PFPeA	83.7	48.5	58			25-150	
13C2 PFTeDA	83.7	57.9	69			50-150	
d3-NMeFOSAA	83.7	48.5	58			50-150	
d5-NEtFOSAA	83.7	60.8	73			50-150	
M2-6:2 FTS	79.5	156	196			25-150	*
M2-8:2 FTS	80.2	94.1	117			25-150	
13C3 PFBS	77.8	55.9	72			50-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab File ID: PF010719A57.d Lab Sample ID: MB 200-138726/1-A
 Matrix: Water Date Extracted: 01/02/2019 13:45
 Instrument ID: LC410 Date Analyzed: 01/08/2019 08:02
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 200-138726/2-A	PF010719A58 .d	01/08/2019 08:18
FB-01-121918	480-147040-1	PF010719A67 .d	01/08/2019 10:41
EB-01-121918	480-147040-2	PF010719A68 .d	01/08/2019 10:57
MW-09-121918	480-147040-3	PF010719A70 .d	01/08/2019 11:29
MW-09-121918 MS	480-147040-3 MS	PF010719A71 .d	01/08/2019 11:45
MW-09-121918 MSD	480-147040-3 MSD	PF010719A72 .d	01/08/2019 12:01
MW-10-121918	480-147040-4	PF010719A73 .d	01/08/2019 12:17
MW-01R-121918	480-147040-5	PF010719A74 .d	01/08/2019 12:33
FD-01-121918	480-147040-6	PF010719A75 .d	01/08/2019 12:49

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Sample No.: ICIS 200-135376/10 Date Analyzed: 10/17/2018 14:23
 Instrument ID: LC410 GC Column: C-18 ID: 4.6 (mm)
 Lab File ID (Standard): PF101718A10.d Heated Purge: (Y/N) N
 Calibration ID: 40218

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	1146400	4.37				
UPPER LIMIT	1719600	4.57				
LOWER LIMIT	573200	4.17				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICV 200-135376/16	1021250	4.37				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Sample No.: CCVIS 200-138864/6 Date Analyzed: 01/07/2019 18:32
 Instrument ID: LC410 GC Column: C-18 ID: 4.6 (mm)
 Lab File ID (Standard): PF010719A06.d Heated Purge: (Y/N) N
 Calibration ID: 40218

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	570184	4.47				
UPPER LIMIT	855276	4.67				
LOWER LIMIT	285092	4.27				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVL 200-138864/7		569256	4.45			
CCV 200-138864/56		540224	4.39			
MB 200-138726/1-A		733237	4.37			
LCS 200-138726/2-A		631678	4.36			
480-147040-1	FB-01-121918	640068	4.37			
480-147040-2	EB-01-121918	719350	4.37			
CCV 200-138864/69		733818	4.37			
480-147040-3	MW-09-121918	552913	4.30			
480-147040-3 MS	MW-09-121918 MS	590524	4.32			
480-147040-3 MSD	MW-09-121918 MSD	567219	4.30			
480-147040-4	MW-10-121918	438612	4.23*			
480-147040-5	MW-01R-121918	551538	4.36			
480-147040-6	FD-01-121918	398384	4.24*			
CCV 200-138864/82		636745	4.36			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: FB-01-121918 Lab Sample ID: 480-147040-1
 Matrix: Water Lab File ID: PF010719A67.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 10:25
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 283.3(mL) Date Analyzed: 01/08/2019 10:41
 Con. Extract Vol.: 0.5(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		1.8	0.36
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.8	0.66
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.8	0.21
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.28
335-67-1	Perfluorooctanoic acid (PFOA)	0.28	J B	1.8	0.28
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.8	0.34
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.8	0.34
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.22
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.31
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	0.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.40
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.39
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.23
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.72
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.67
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.47
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.8	0.49
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	0.40
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	0.62
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		18	0.88
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	0.49

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: FB-01-121918 Lab Sample ID: 480-147040-1
 Matrix: Water Lab File ID: PF010719A67.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 10:25
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 283.3(mL) Date Analyzed: 01/08/2019 10:41
 Con. Extract Vol.: 0.5(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	99		50-150
STL01892	13C4 PFHpA	81		50-150
STL00990	13C4 PFOA	84		50-150
STL00991	13C4 PFOS	93		50-150
STL00995	13C5 PFNA	79		50-150
STL00992	13C4 PFBA	80		25-150
STL00993	13C2 PFHxA	88		50-150
STL00996	13C2 PFDA	85		50-150
STL00997	13C2 PFUnA	80		50-150
STL00998	13C2 PFDoA	67		50-150
STL01056	13C8 FOSA	50		25-150
STL01893	13C5 PFPeA	100		25-150
STL02116	13C2 PFTeDA	53		50-150
STL02118	d3-NMeFOSAA	63		50-150
STL02117	d5-NEtFOSAA	71		50-150
STL02279	M2-6:2 FTS	119		25-150
STL02280	M2-8:2 FTS	86		25-150
STL02337	13C3 PFBS	101		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d
 Lims ID: 480-147040-A-1-A
 Client ID: FB-01-121918
 Sample Type: Client
 Inject. Date: 08-Jan-2019 10:41:56 ALS Bottle#: 0 Worklist Smp#: 67
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-067 040-1
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:37:02 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303

First Level Reviewer: chirgwinb Date: 08-Jan-2019 16:41:31
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.392	2.402	-0.010	1.000	299177	39.8	79.6	134	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.330	2.402	-0.072	0.974	1268	0.0597			5.0	M
D 3 13C5 PFPeA	267.7 > 222.6	2.801	2.818	-0.017	1.000	239409	50.2	100	1532	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.770	2.818	-0.048	0.989	920	0.0675			2.0	M
D 6 13C3 PFBS	302.0 > 79.8	2.867	2.900	-0.033	1.000	185556	47.1	101	284	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.867	2.900	-0.033	1.000	105	0.0151			1.3	M
D 7 13C2 PFHxA	314.8 > 269.6	3.214	3.250	-0.036	1.000	376302	43.8	87.6	1524	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.263	3.250	0.013	1.015	325	0.0416			5.5	M
D 9 13C4 PFHpA	366.9 > 321.8	3.726	3.782	-0.056	1.000	637775	40.5	81.1	494	
10 Perfluoroheptanoic acid										M
362.9 > 318.8	3.737	3.782	-0.045	1.003	1105	0.0886			5.6	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.793	3.815	-0.022	1.006	534	-0.1590			3.9	M
D 11 18O2 PFHxS	402.9 > 83.8	3.770	3.826	-0.056	1.000	212328	46.7	98.6	583	
D 13 M2-6:2 FTS	428.6 > 408.6	4.342	4.411	-0.069	1.000	79166	56.4	119	346	
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.374	4.449	-0.075	1.000	1602	0.1603			10.9	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.468	-0.094	1.000	504870	42.0		84.1	1397	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.468	-0.094		640068	50.0			3305	
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.449	4.505	-0.056	0.866	162	0.0455			1.8	M
D 20 13C5 PFNA										
467.8 > 422.8	5.127	5.222	-0.095	1.000	641350	39.6		79.2	548	
D 22 13C4 PFOS										
502.8 > 79.8	5.140	5.236	-0.096	1.000	178296	44.2		92.6	494	
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	5.236	5.250	-0.014	1.019	255	0.0661			3.6	M
23 1H,1H,2H,2H-perfluorodecanesulfoni										M
526.8 > 506.5	5.803	5.998	-0.195	0.986	600	0.2268			3.5	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.998	-0.116	1.000	157047	41.3		86.2	1228	
25 Perfluorodecanoic acid										M
512.9 > 468.5	5.882	6.022	-0.140	0.997	665	0.0463			3.9	M
D 26 13C2 PFDA										
514.9 > 469.5	5.902	6.022	-0.120	1.000	710839	42.6		85.1	5147	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.367	-0.126	1.000	134565	31.5		63.1	1414	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.734	-0.100	1.000	128947	35.6		71.2	1042	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.777	-0.107	1.000	692180	39.8		79.6	1368	
33 Perfluoroundecanoic acid										M
562.8 > 518.6	6.616	6.777	-0.161	0.992	1068	0.0752			7.4	M
D 35 13C8 FOSA										
505.8 > 77.8	6.917	6.945	-0.028	1.000	193305	24.9		49.8	1583	
34 Perfluorooctanesulfonamide										M
497.8 > 77.8	6.973	6.959	0.014	1.008	167	0.0510			1.5	M
D 37 13C2 PFDoA										
614.8 > 569.6	7.339	7.474	-0.135	1.000	736553	33.5		67.0	2273	
36 Perfluorododecanoic acid										M
612.8 > 568.6	7.249	7.474	-0.225	0.988	89	0.007038			1.1	M
38 Perfluorotridecanoic acid										M
662.8 > 618.6	8.021	8.097	-0.076	0.940	324	0.0307			4.6	M
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.575	8.666	-0.091	1.005	587	0.0558	Target=1.00		4.6	M
D 40 13C2 PFTeDA										
714.8 > 669.6	8.529	8.681	-0.152	1.000	539833	26.7		53.5	1328	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d

Injection Date: 08-Jan-2019 10:41:56

Instrument ID: LC410

Lims ID: 480-147040-A-1-A

Lab Sample ID: 200-147040-1

Client ID: FB-01-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 67

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

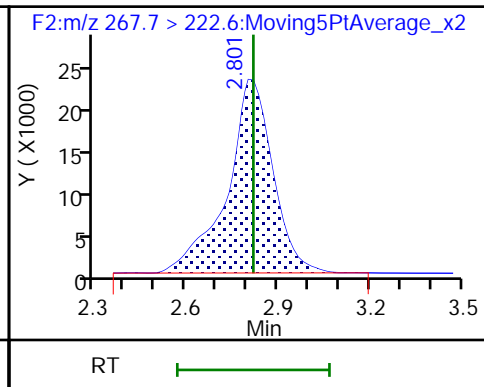
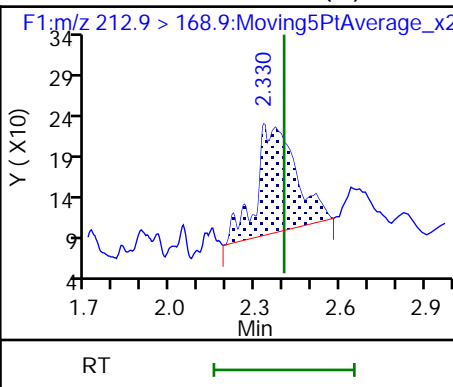
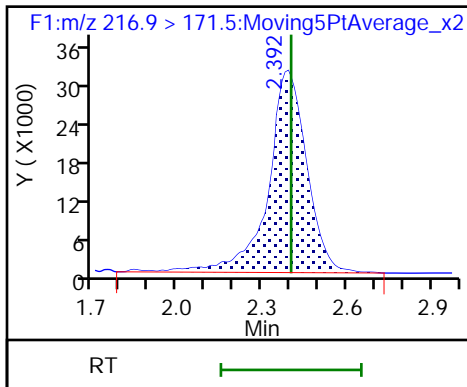
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

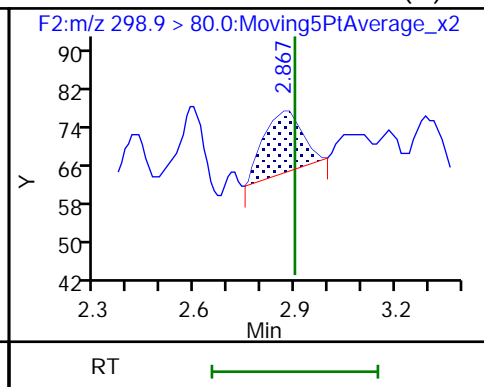
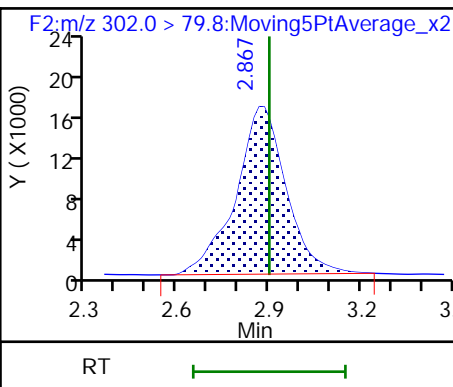
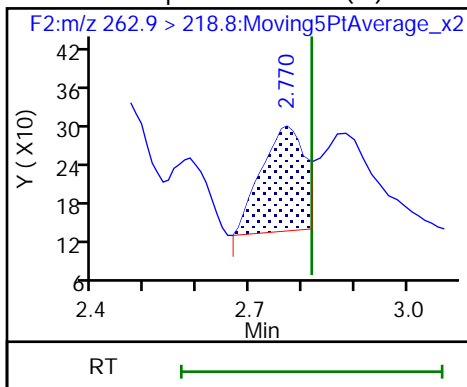
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

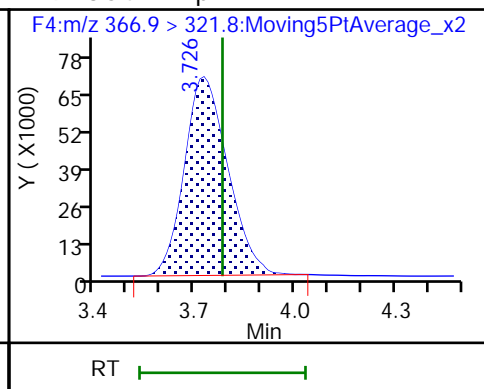
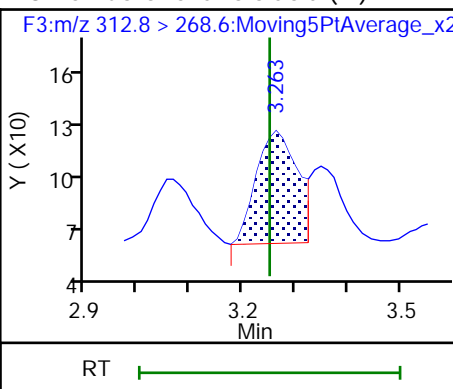
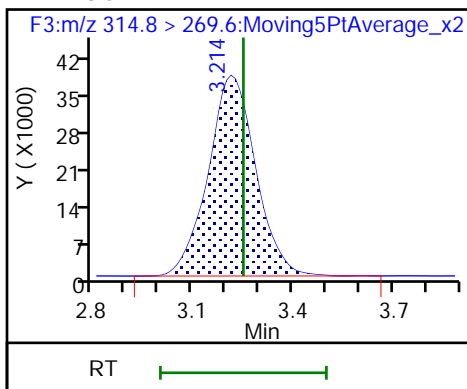
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

8 Perfluorohexanoic acid (M)

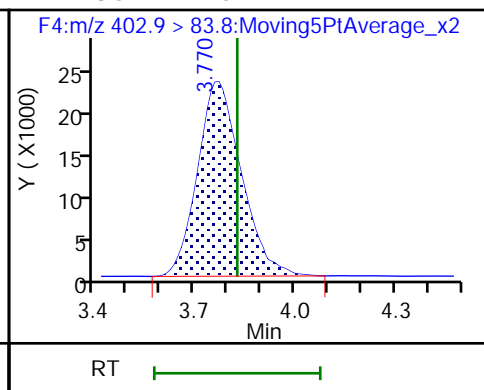
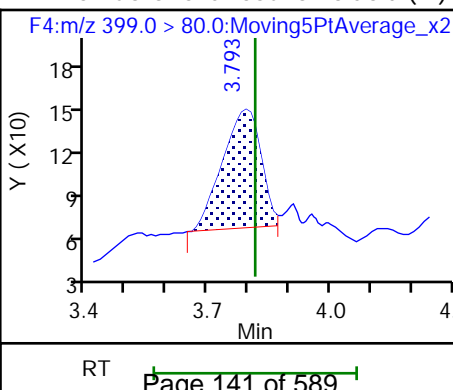
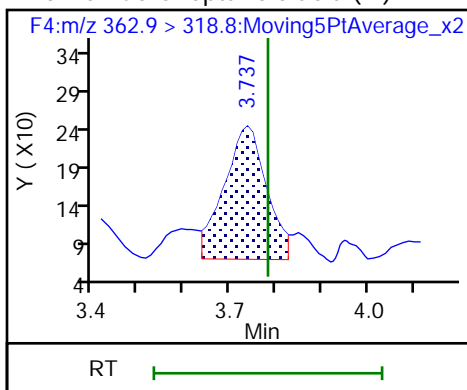
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

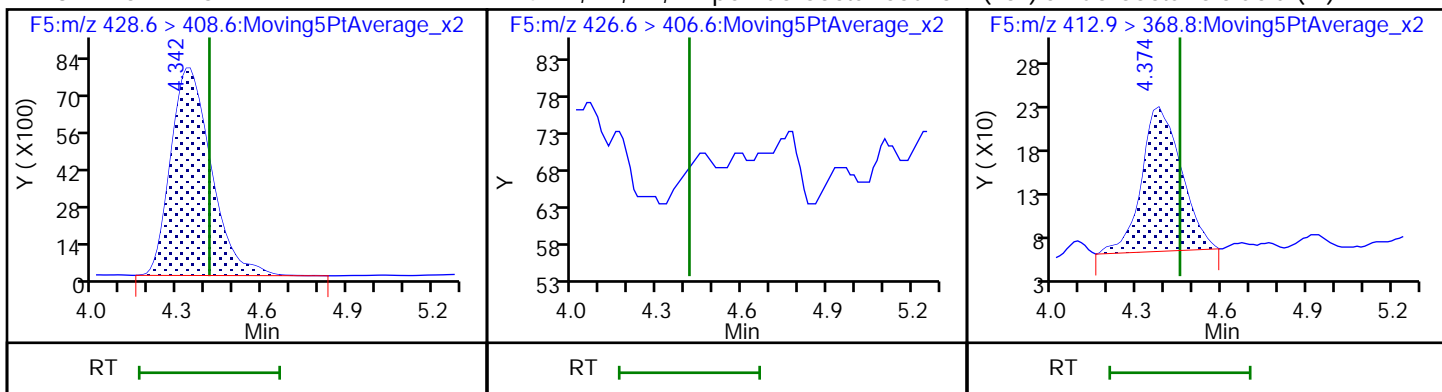
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

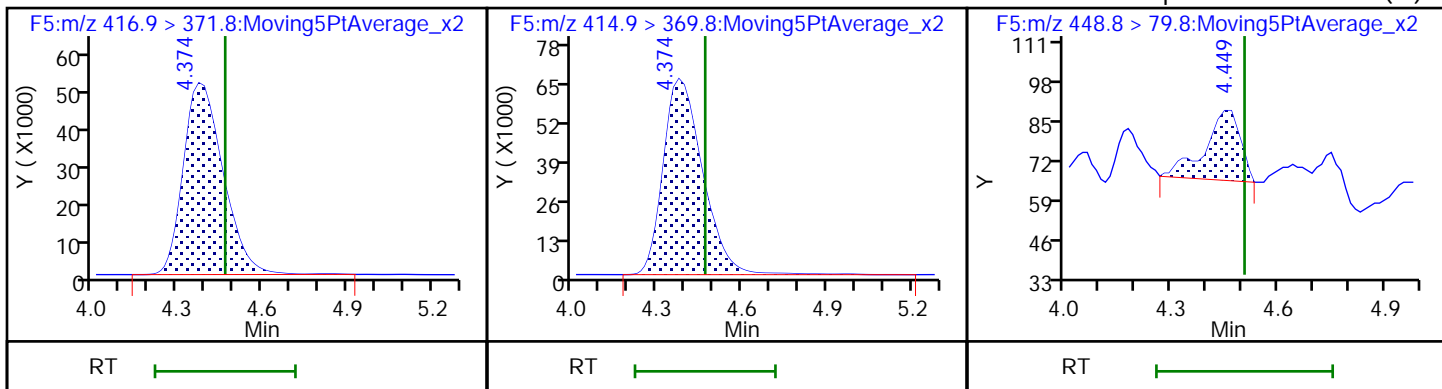
14 1H,1H,2H,2H-perfluorooctanesulfoni (ND) Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA

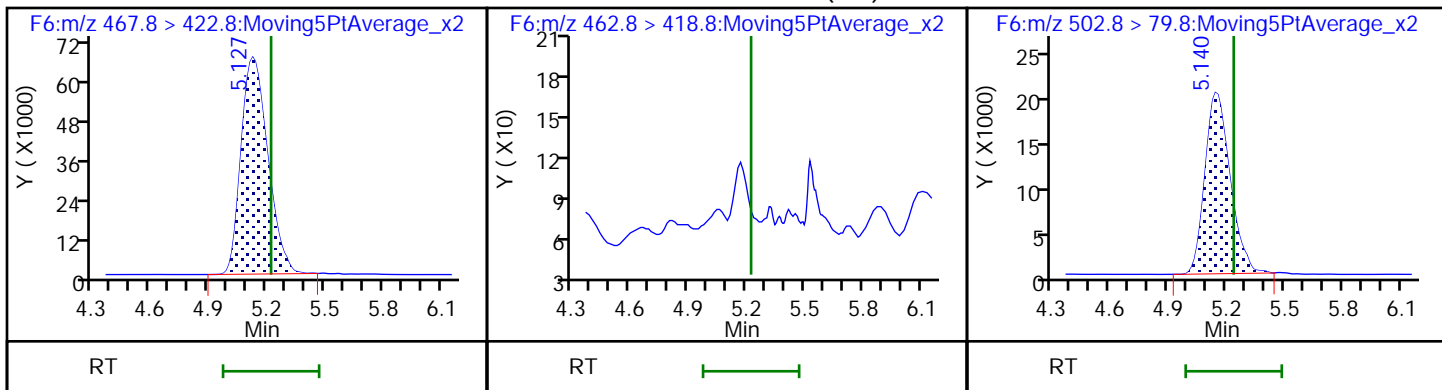
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

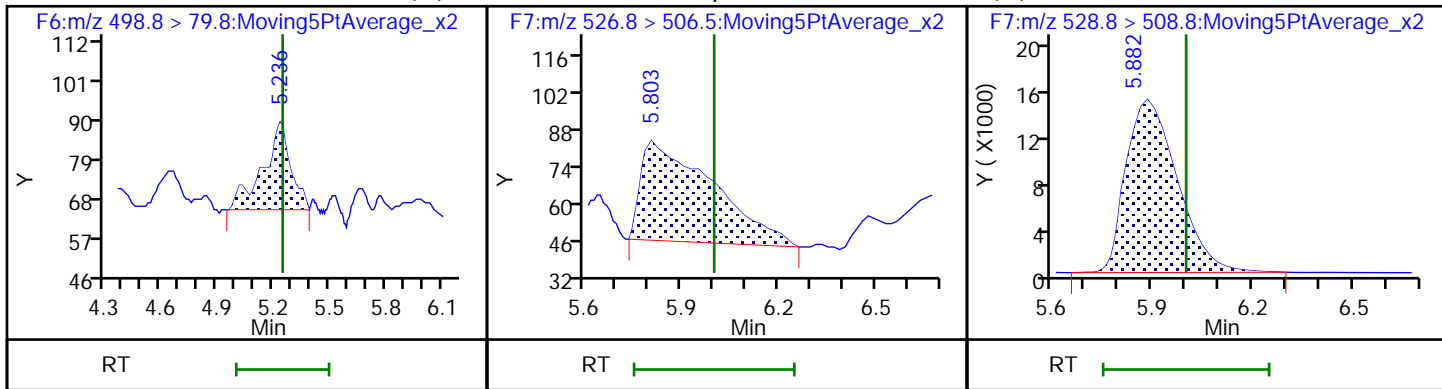
19 Perfluorononanoic acid (ND)

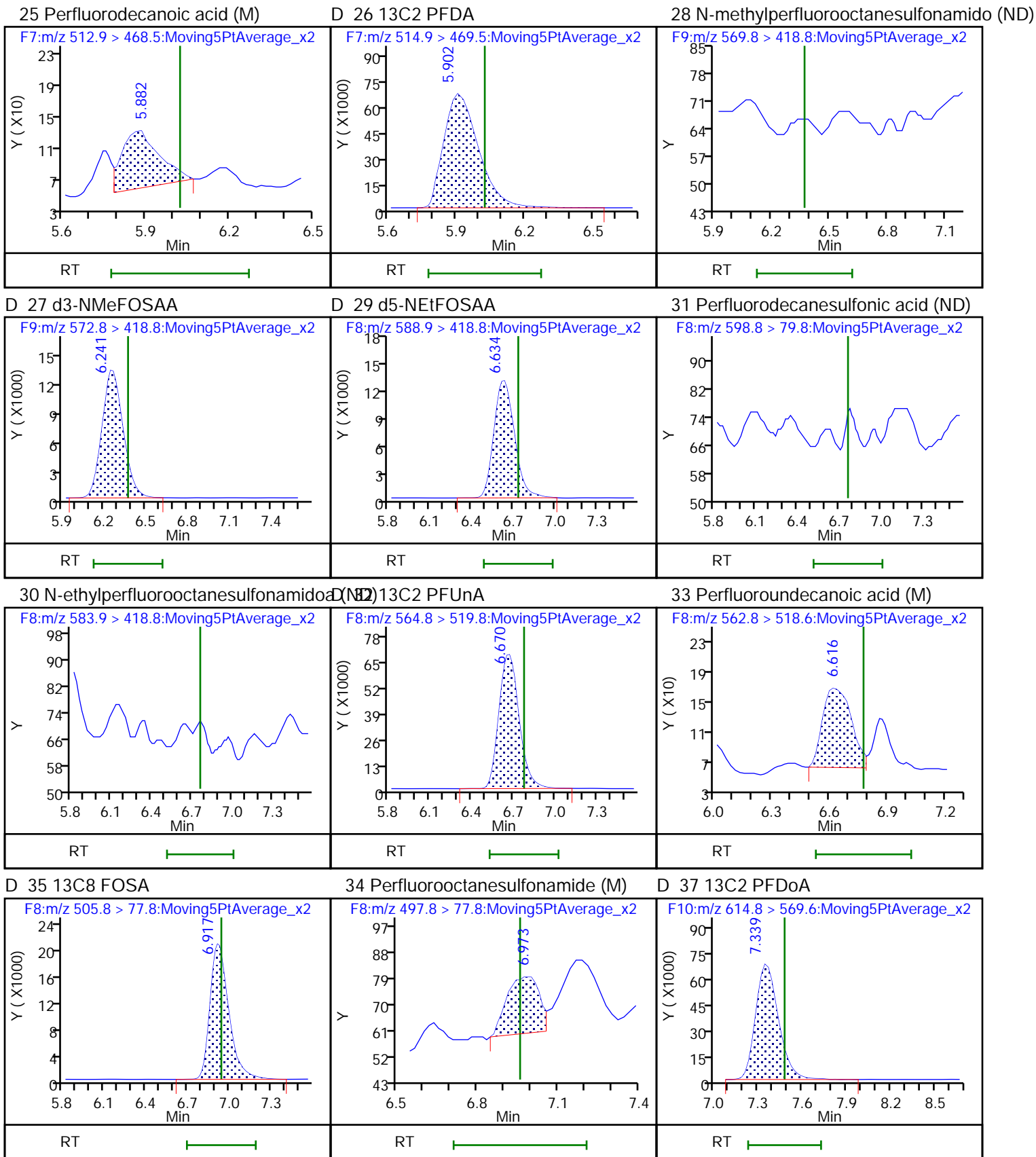
D 22 13C4 PFOS

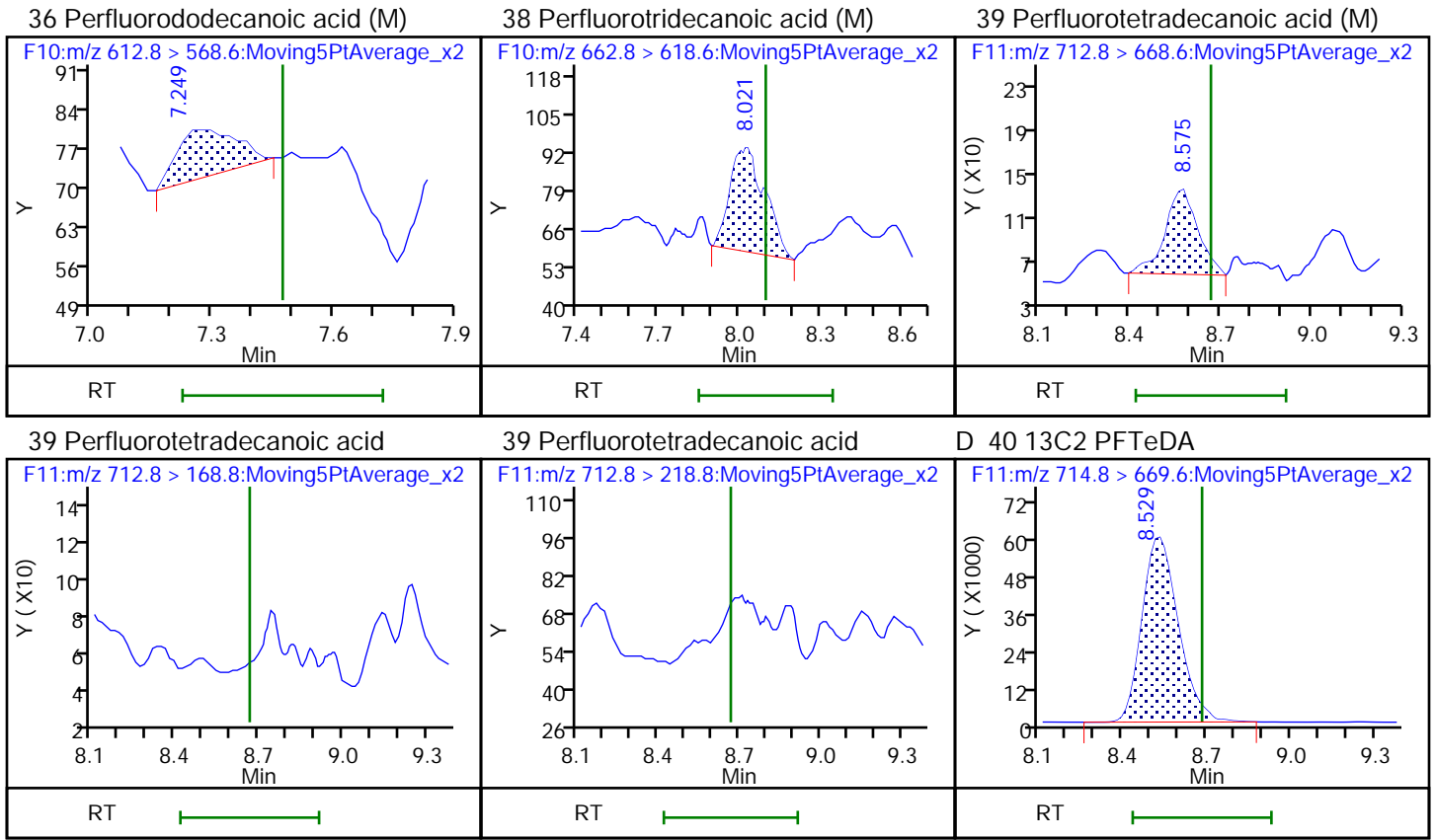


21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfoni (ND) M2-8:2 FTS







TestAmerica Burlington

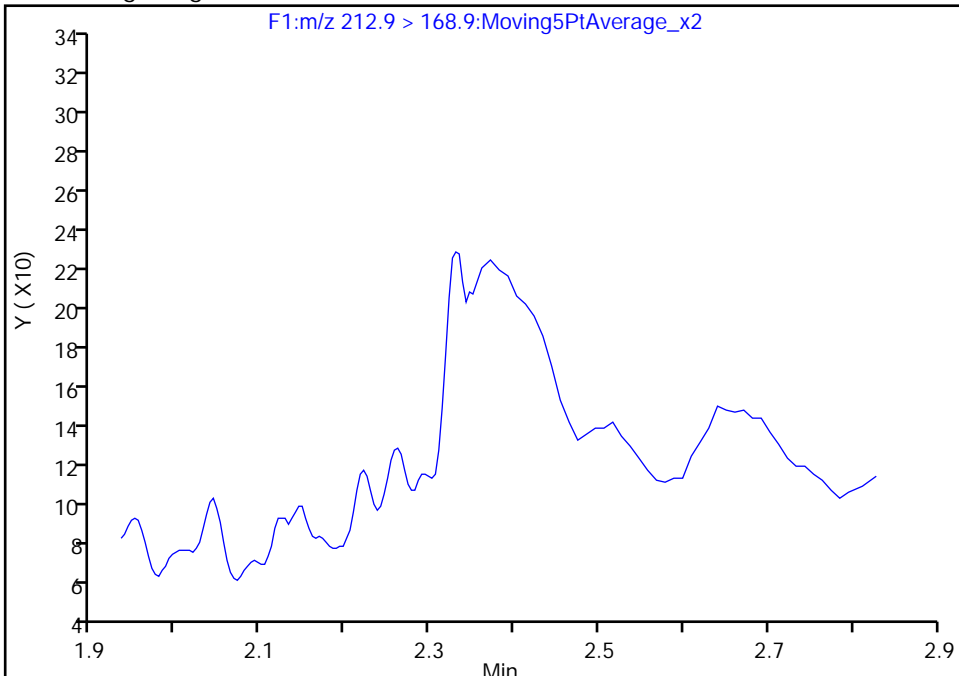
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

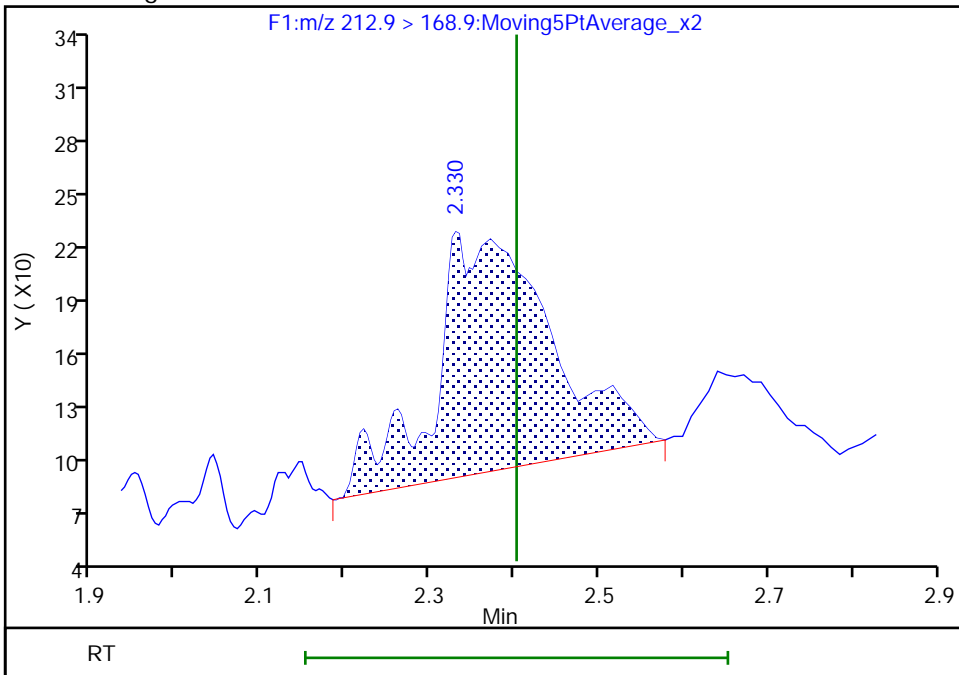
Not Detected
Expected RT: 2.40

Processing Integration Results



Manual Integration Results

RT: 2.33
Area: 1268
Amount: 0.059687
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:45:32
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

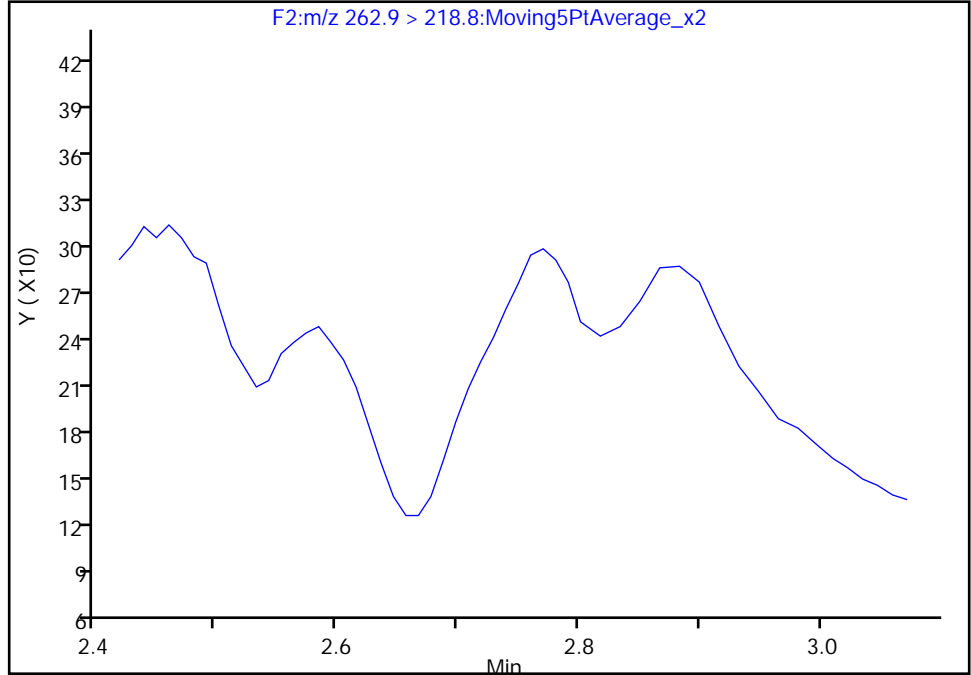
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

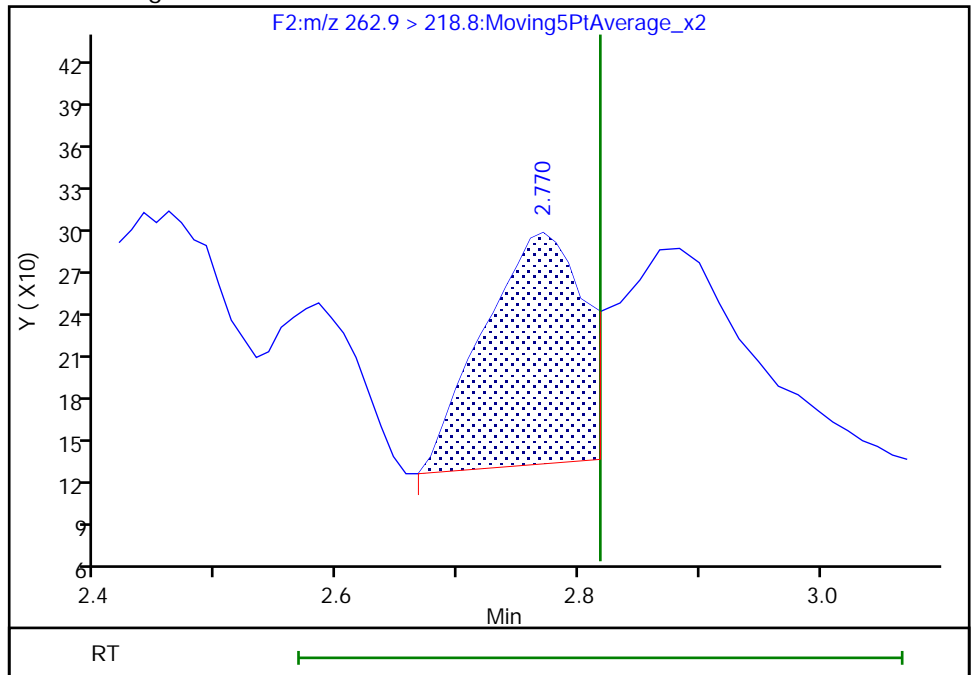
Not Detected
Expected RT: 2.82

Processing Integration Results



Manual Integration Results

RT: 2.77
Area: 920
Amount: 0.067467
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:45:25
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

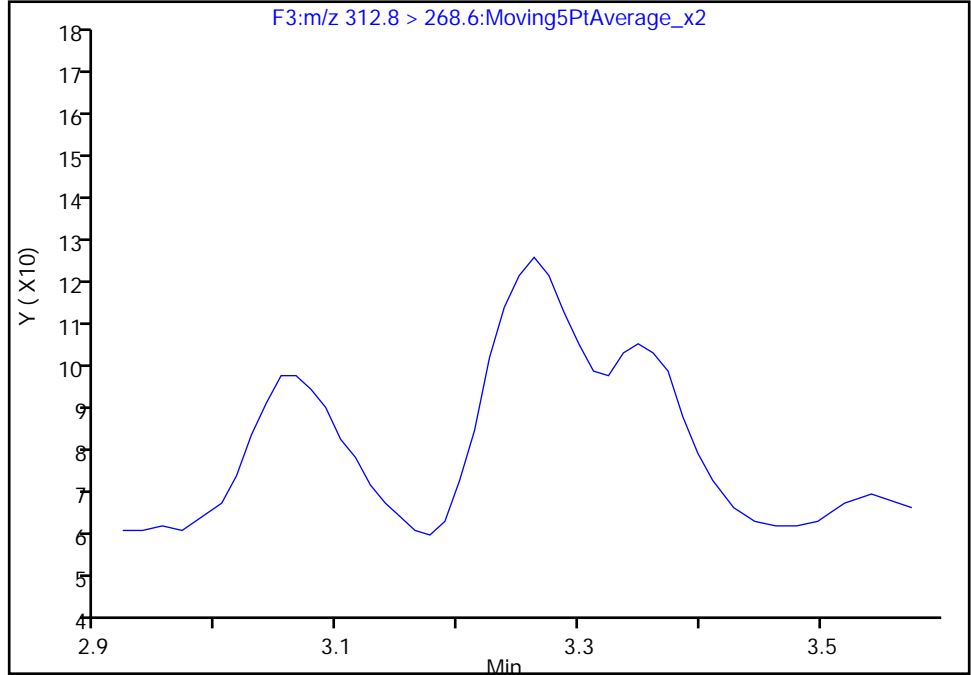
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

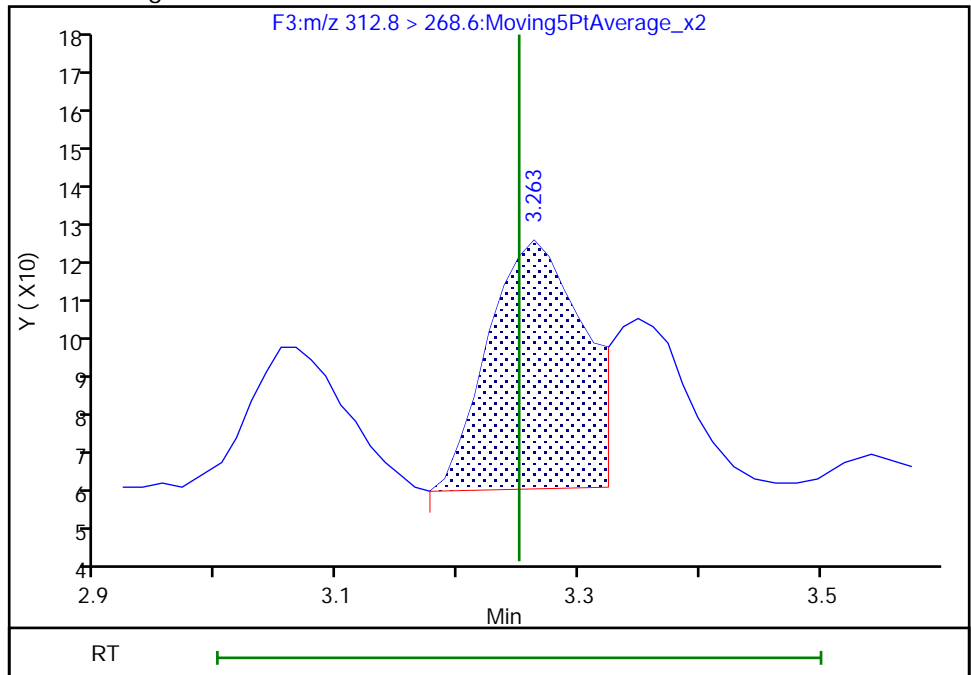
Not Detected
Expected RT: 3.25

Processing Integration Results



Manual Integration Results

RT: 3.26
Area: 325
Amount: 0.041621
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:45:08
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

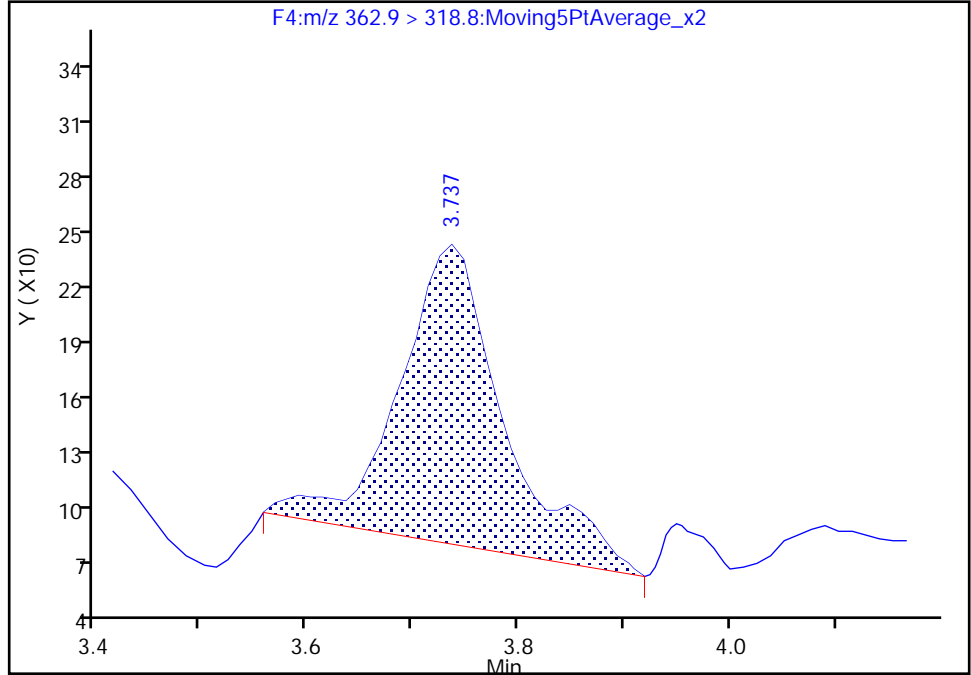
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

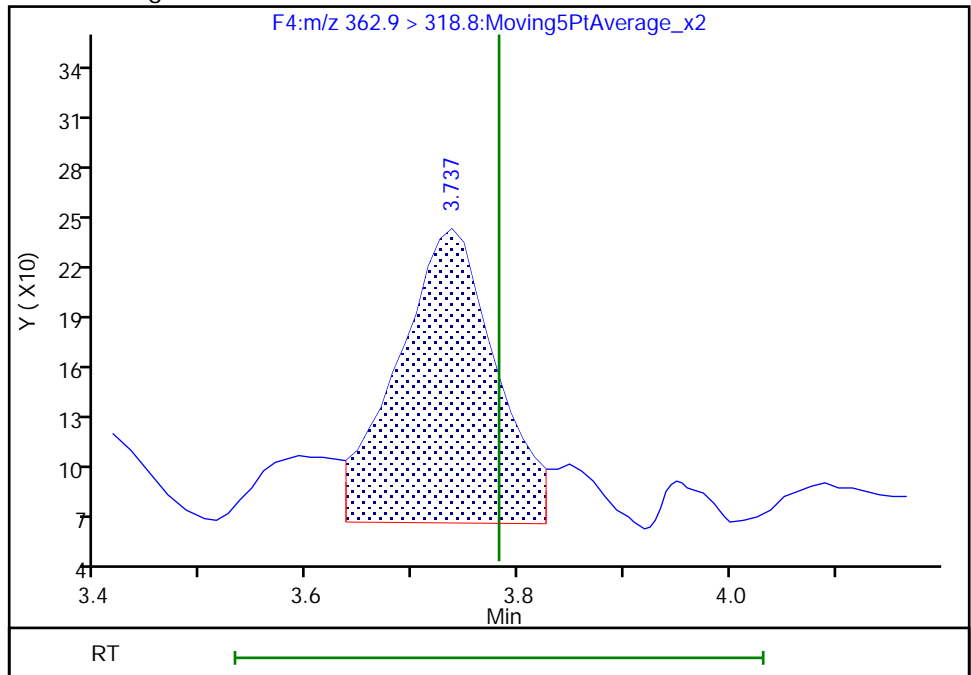
RT: 3.74
Area: 1095
Amount: 0.087825
Amount Units: ng/ml

Processing Integration Results



RT: 3.74
Area: 1105
Amount: 0.088627
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:43:19
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

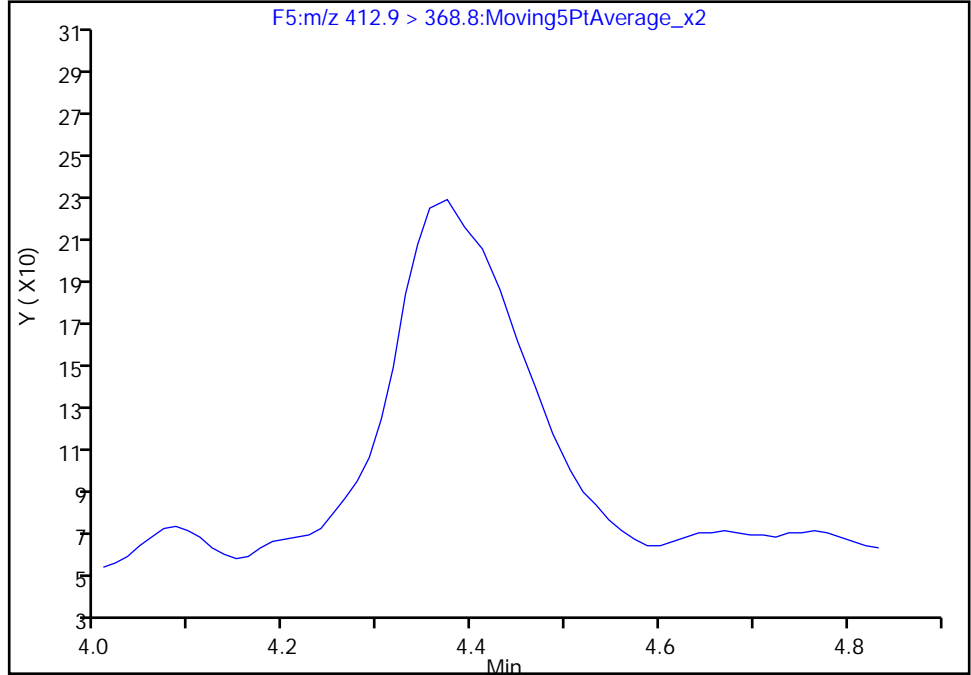
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Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

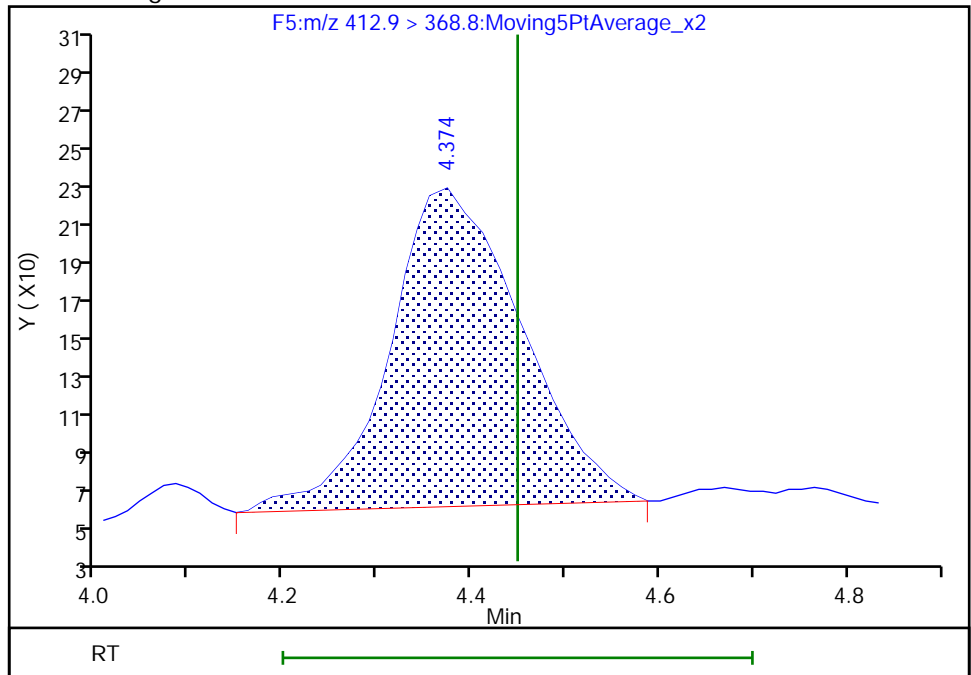
Not Detected
Expected RT: 4.45

Processing Integration Results



Manual Integration Results

RT: 4.37
Area: 1602
Amount: 0.160271
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:44:50
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

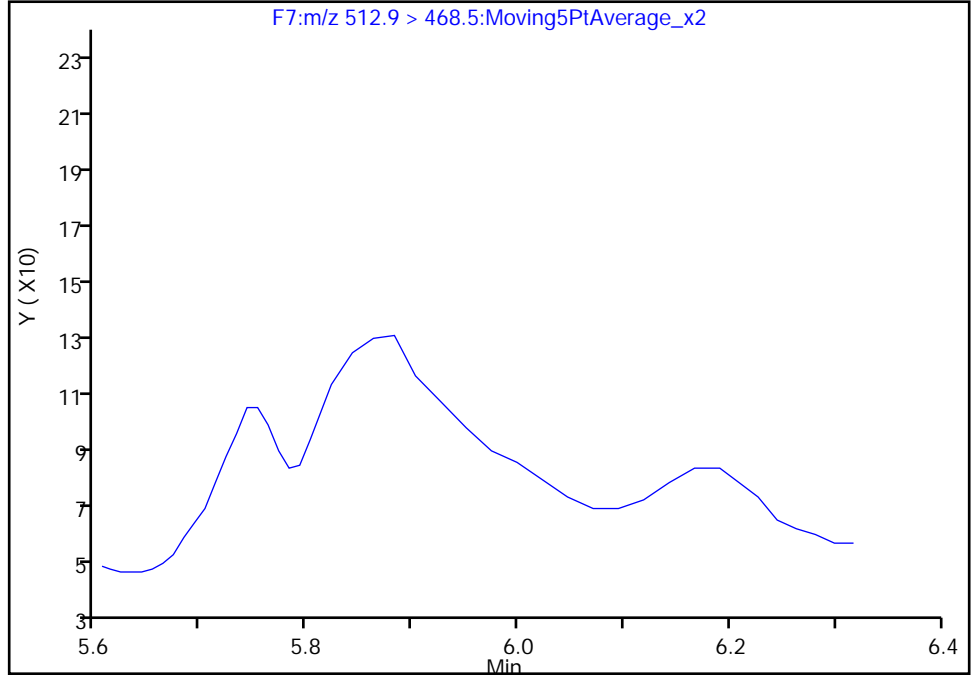
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

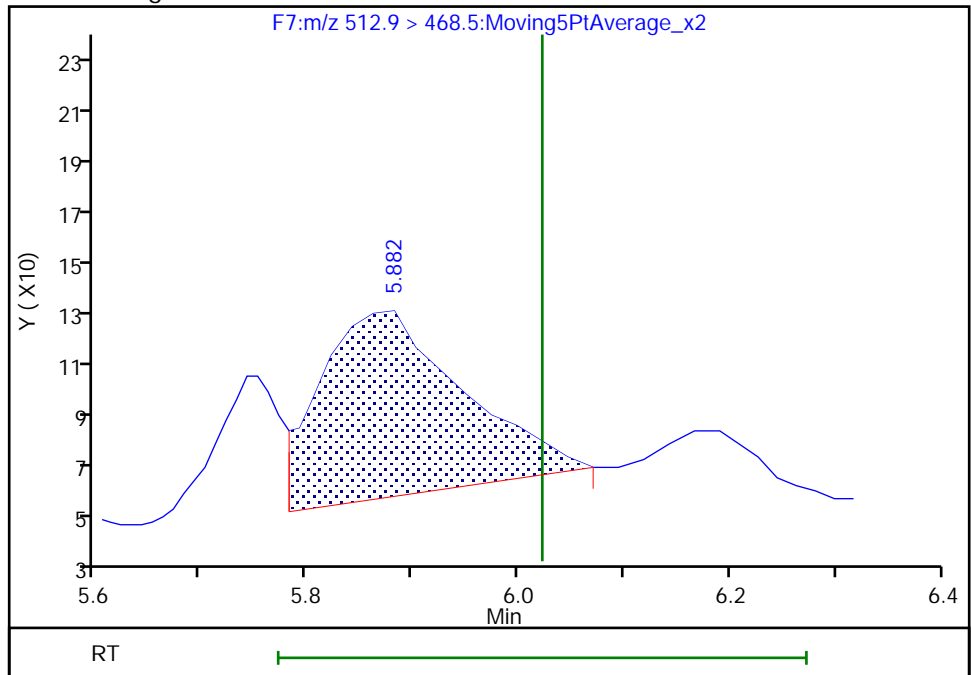
Not Detected
Expected RT: 6.02

Processing Integration Results



Manual Integration Results

RT: 5.88
Area: 665
Amount: 0.046336
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:44:28
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

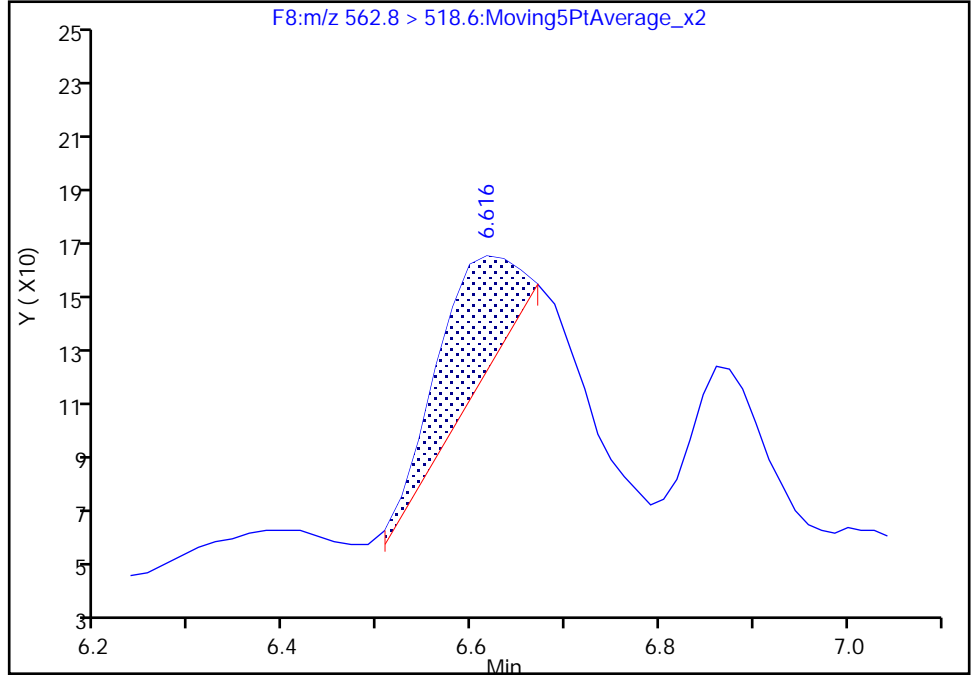
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

33 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

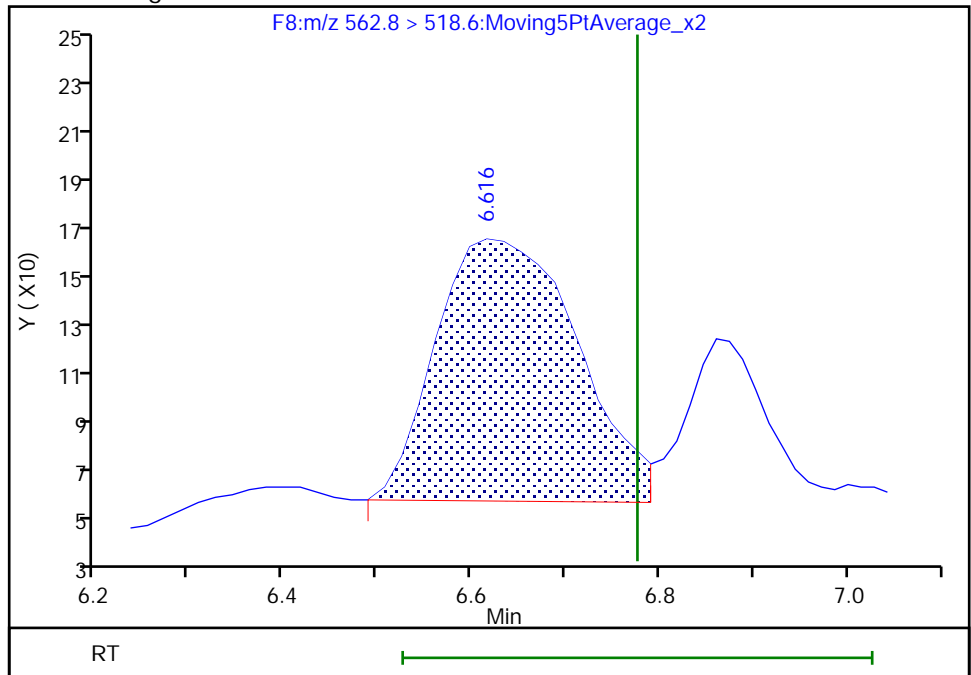
RT: 6.62
Area: 254
Amount: 0.017885
Amount Units: ng/ml

Processing Integration Results



RT: 6.62
Area: 1068
Amount: 0.075200
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:43:42
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

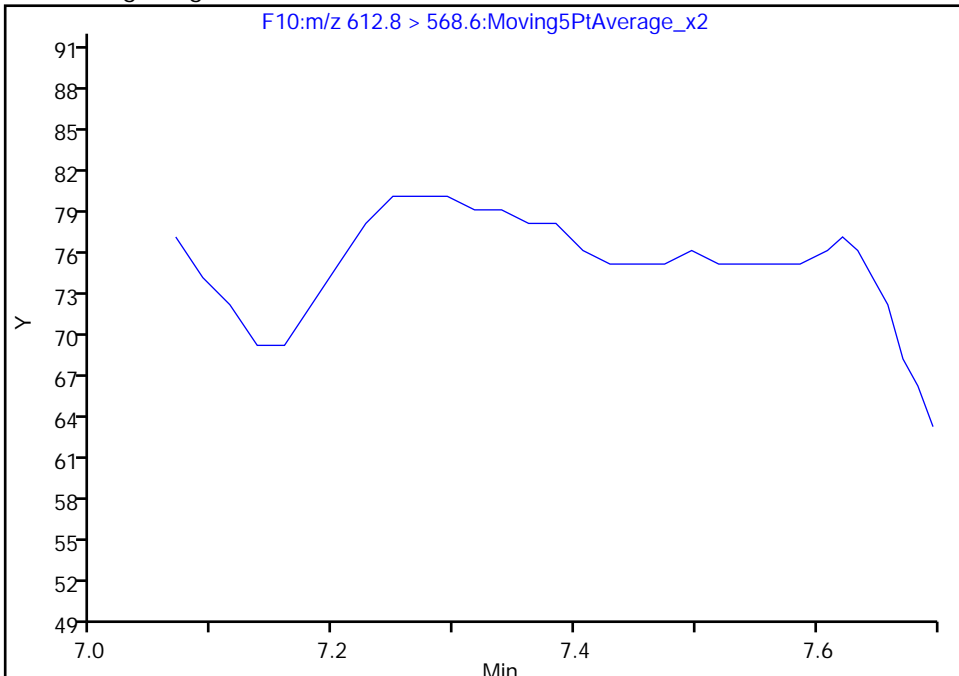
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Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRRM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

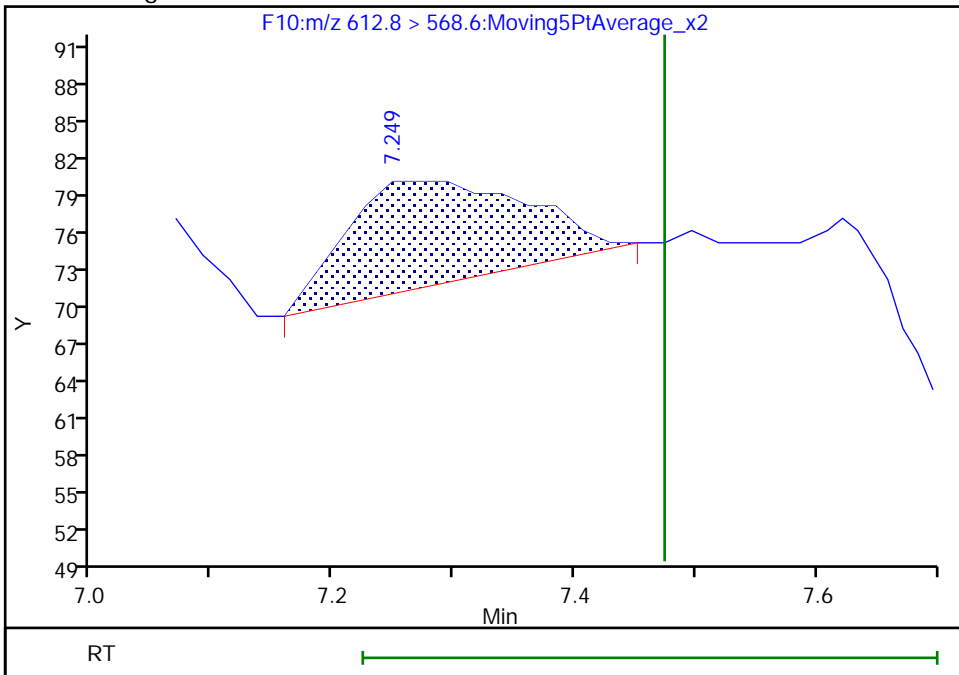
Not Detected
Expected RT: 7.47

Processing Integration Results



RT: 7.25
Area: 89
Amount: 0.007038
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:44:09
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

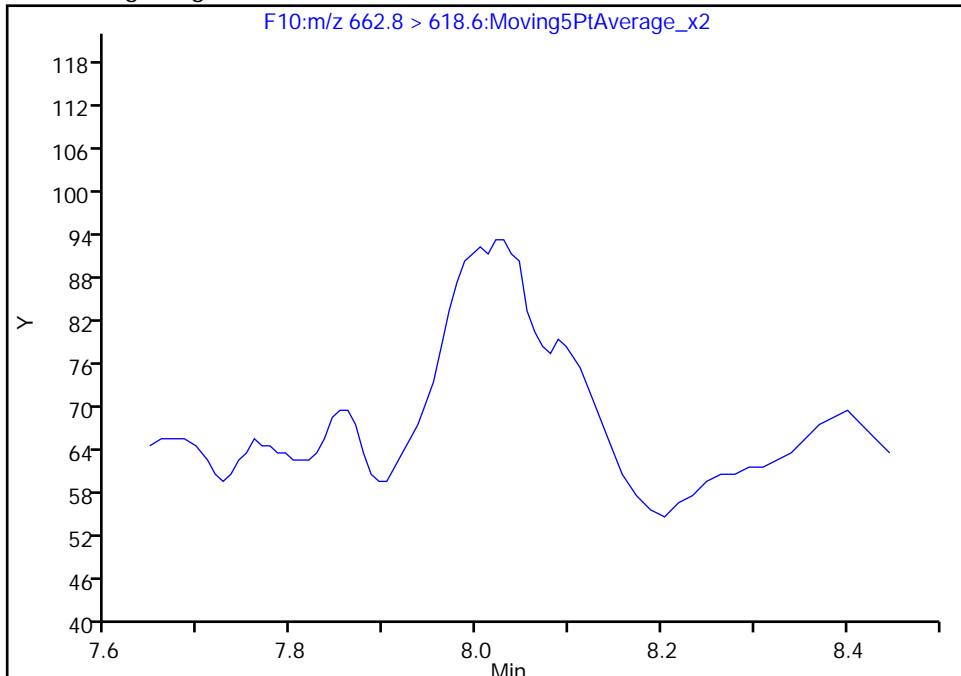
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

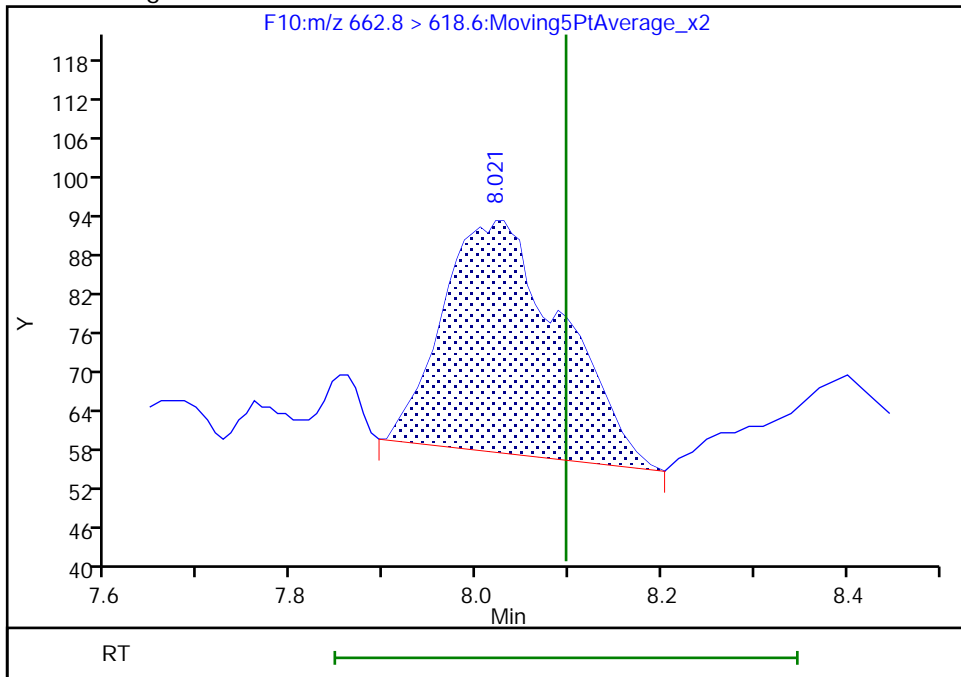
Not Detected
Expected RT: 8.10

Processing Integration Results



RT: 8.02
Area: 324
Amount: 0.030701
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:44:05
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

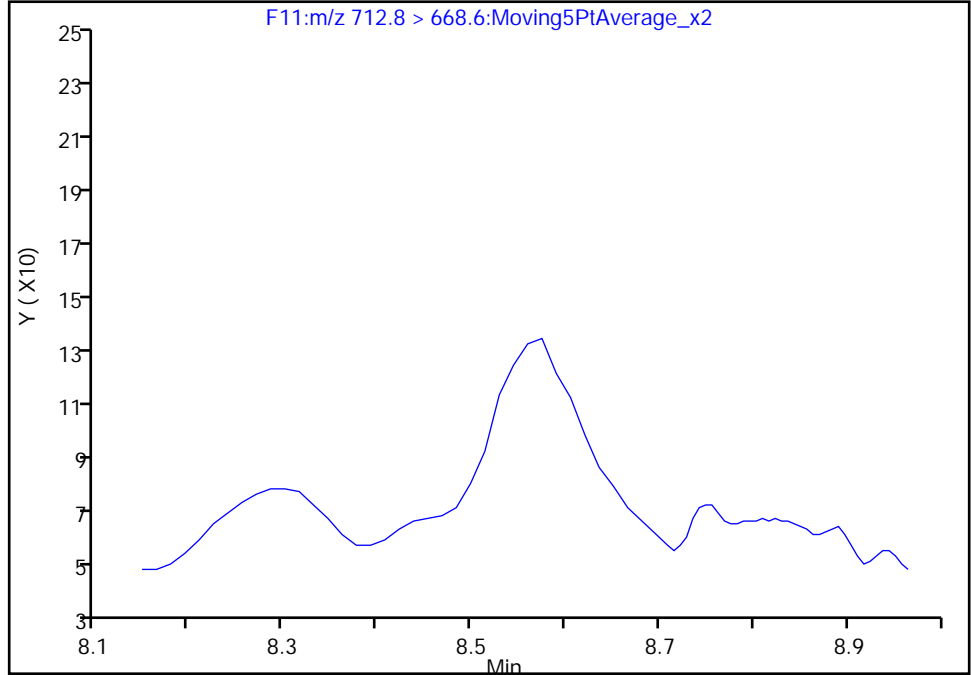
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

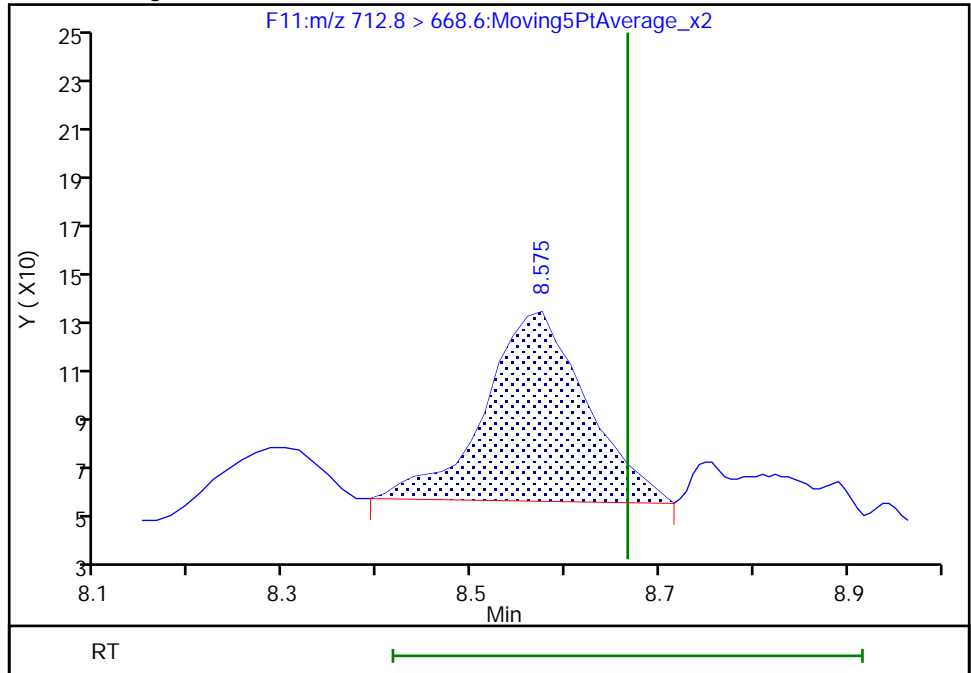
Not Detected
Expected RT: 8.67

Processing Integration Results



RT: 8.57
Area: 587
Amount: 0.055775
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:44:00
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

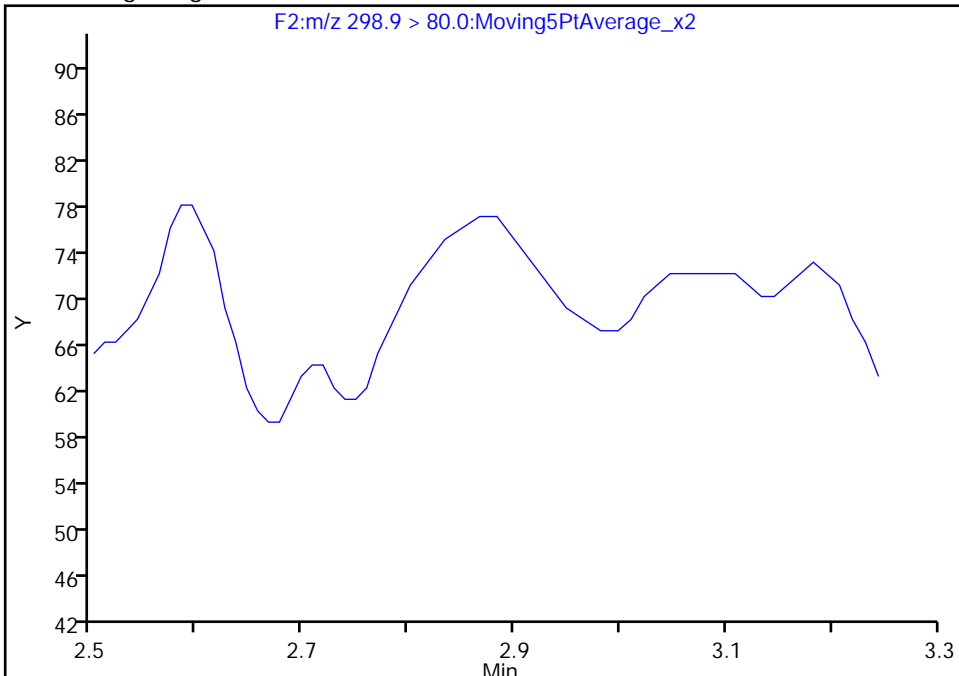
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d
Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

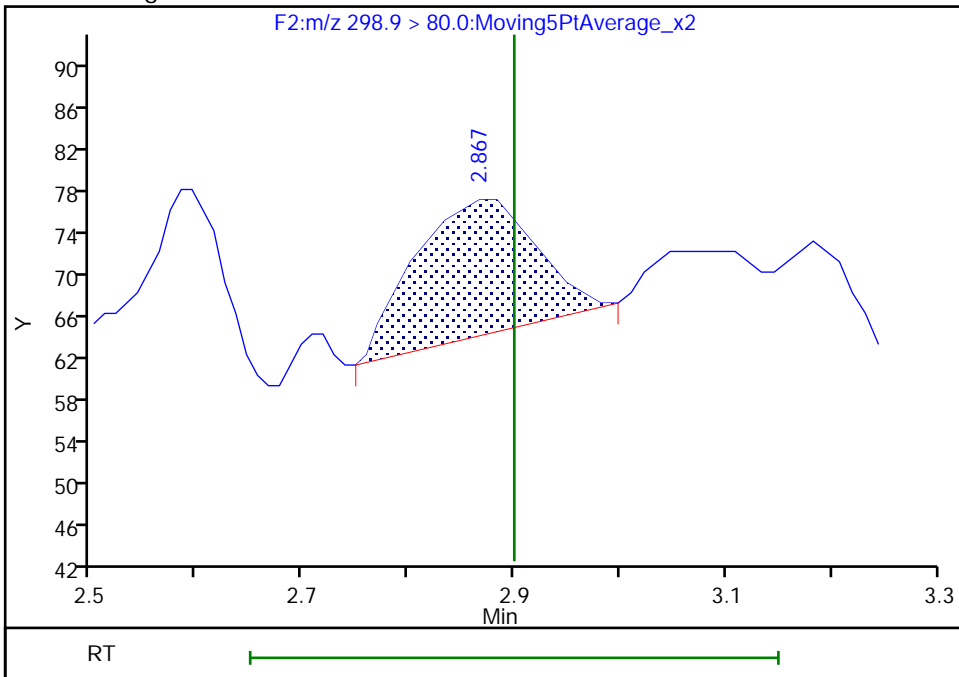
Not Detected
Expected RT: 2.90

Processing Integration Results



Manual Integration Results

RT: 2.87
Area: 105
Amount: 0.015079
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:45:17
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

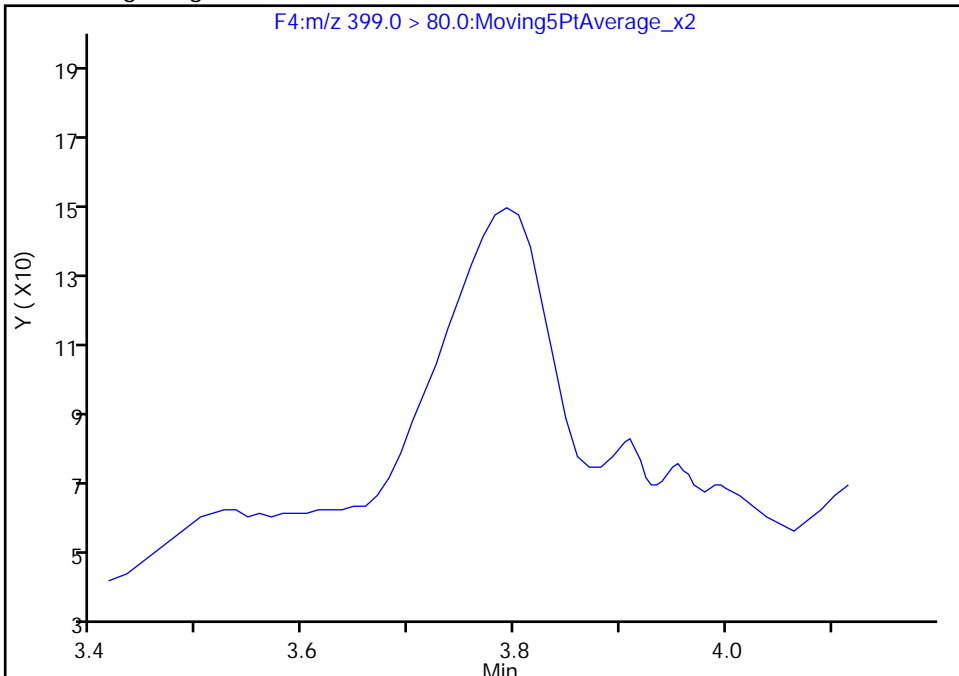
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d
Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

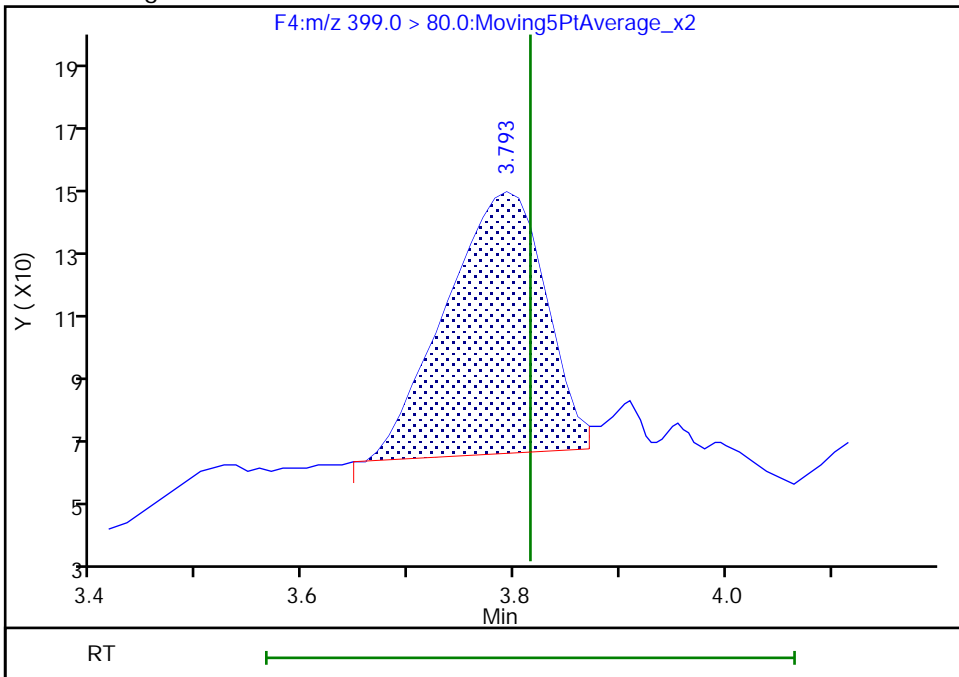
Not Detected
Expected RT: 3.81

Processing Integration Results



RT: 3.79
Area: 534
Amount: -0.159007
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:44:57
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

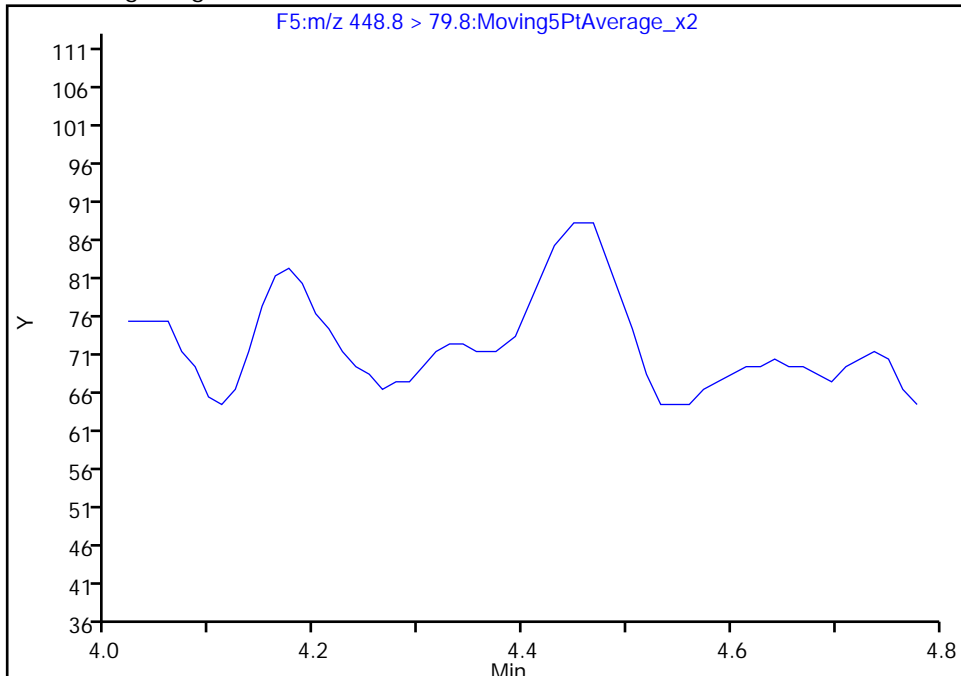
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Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

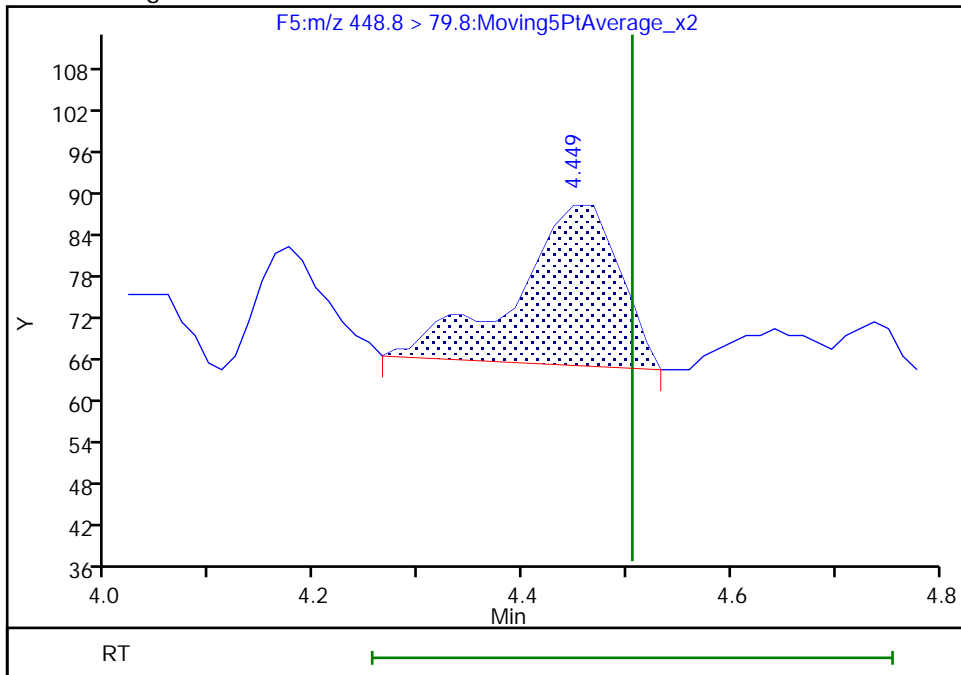
Not Detected
Expected RT: 4.51

Processing Integration Results



Manual Integration Results

RT: 4.45
Area: 162
Amount: 0.045492
Amount Units: ng/ml



TestAmerica Burlington

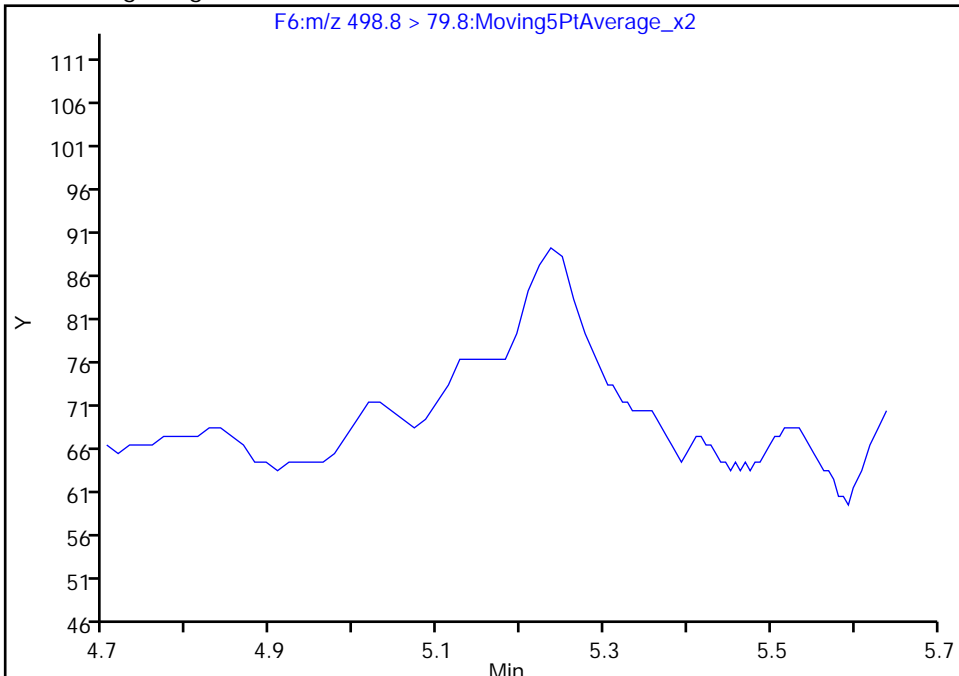
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d
Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

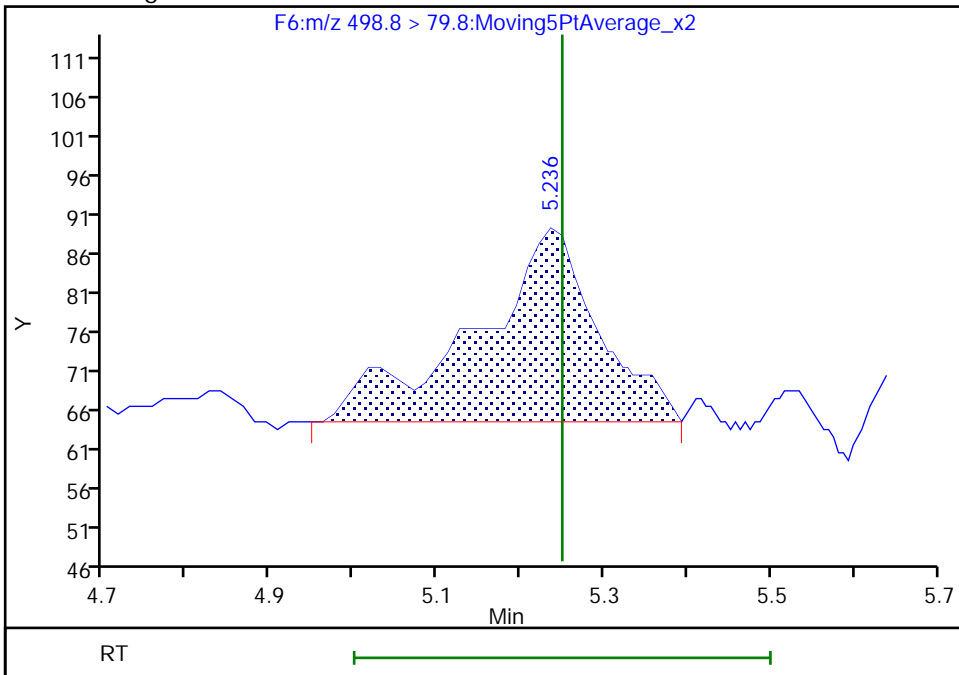
Not Detected
Expected RT: 5.25

Processing Integration Results



RT: 5.24
Area: 255
Amount: 0.066136
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:44:38
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

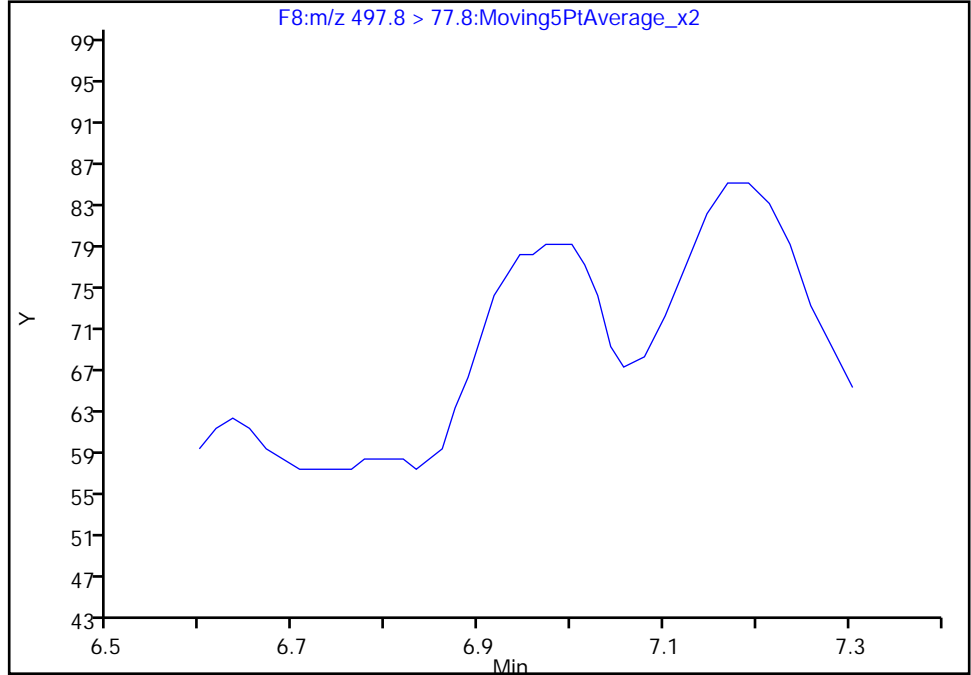
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d
Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

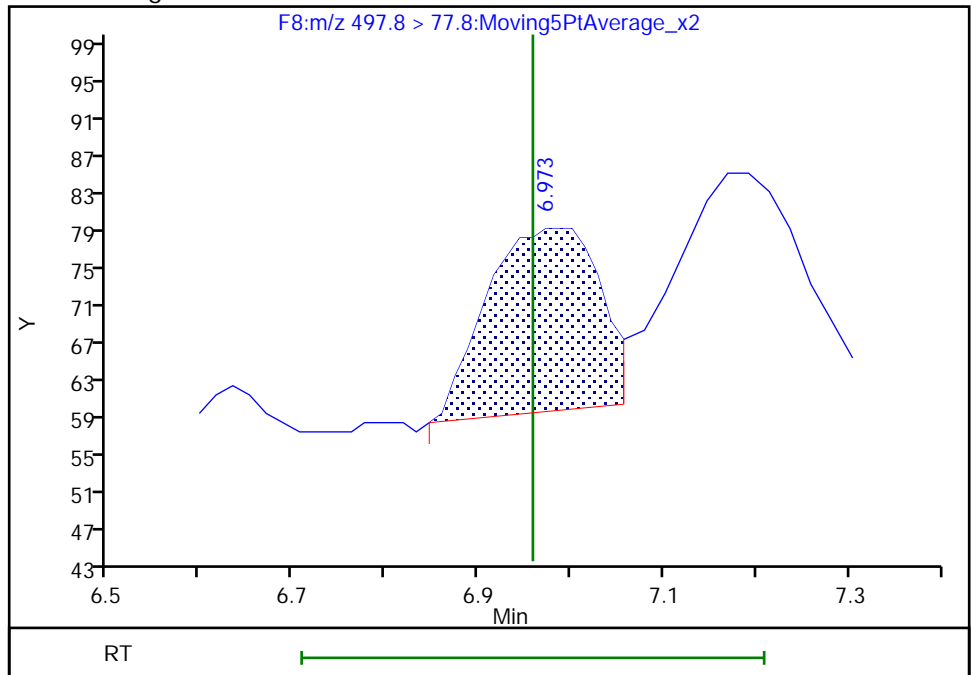
Not Detected
Expected RT: 6.96

Processing Integration Results



Manual Integration Results

RT: 6.97
Area: 167
Amount: 0.051049
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:44:15
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

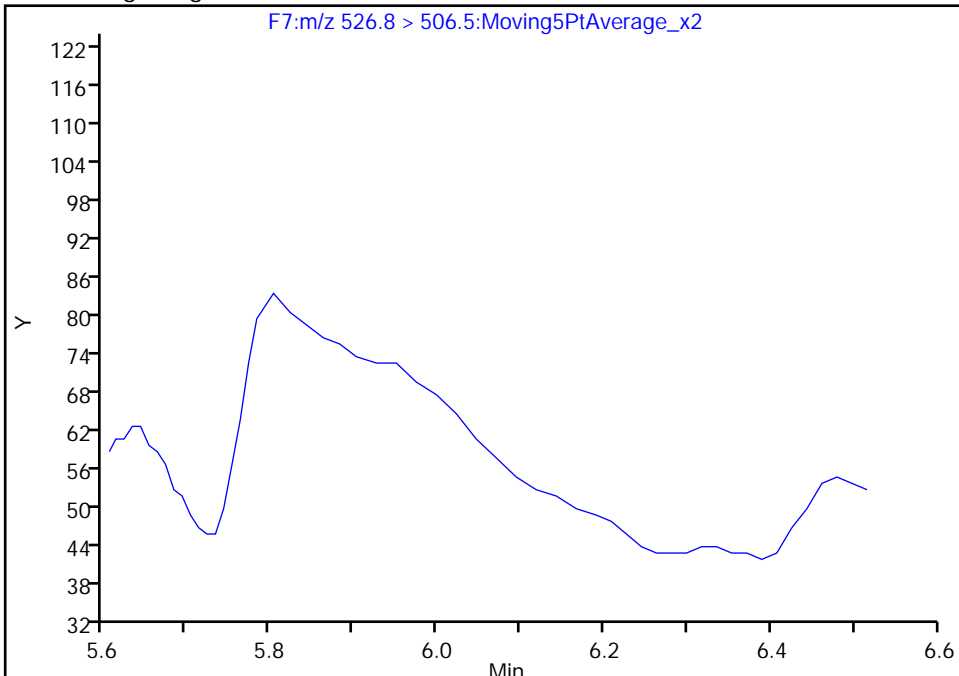
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A67.d
Injection Date: 08-Jan-2019 10:41:56 Instrument ID: LC410
Lims ID: 480-147040-A-1-A Lab Sample ID: 200-147040-1
Client ID: FB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 67
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

23 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

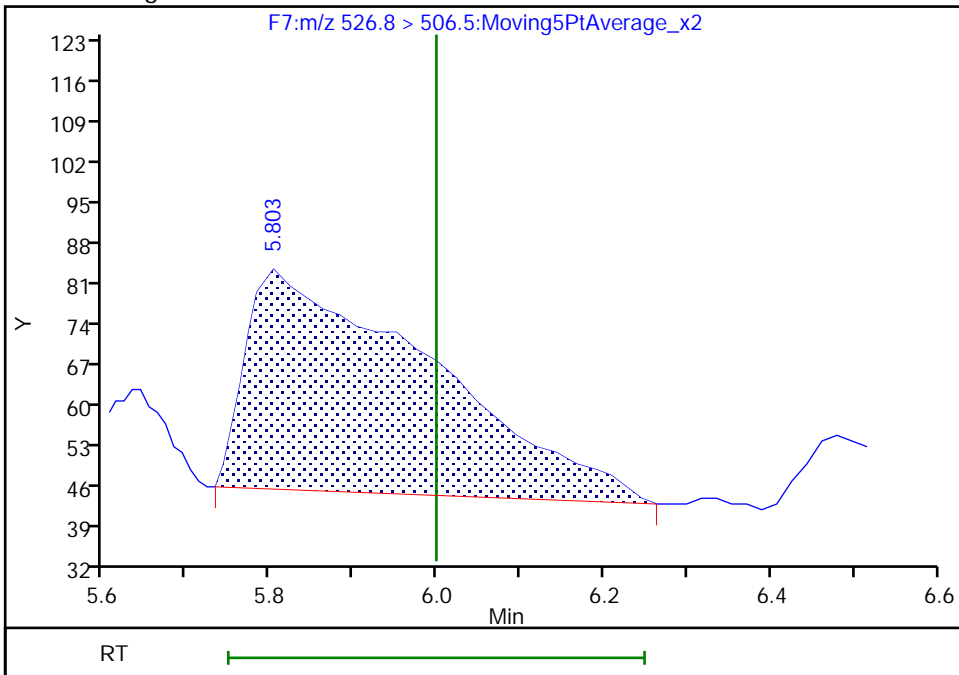
Not Detected
Expected RT: 6.00

Processing Integration Results



Manual Integration Results

RT: 5.80
Area: 600
Amount: 0.226834
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:44:34
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: EB-01-121918 Lab Sample ID: 480-147040-2
 Matrix: Water Lab File ID: PF010719A68.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 10:35
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 293.4 (mL) Date Analyzed: 01/08/2019 10:57
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		1.7	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.7	0.64
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.7	0.20
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.27
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.7	0.27
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.7	0.32
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.32
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.21
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.30
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.20
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.38
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.37
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.22
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.70
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.65
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.45
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.48
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.38
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.60
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	0.85
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.48

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: EB-01-121918 Lab Sample ID: 480-147040-2
 Matrix: Water Lab File ID: PF010719A68.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 10:35
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 293.4 (mL) Date Analyzed: 01/08/2019 10:57
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	95		50-150
STL01892	13C4 PFHpA	82		50-150
STL00990	13C4 PFOA	84		50-150
STL00991	13C4 PFOS	95		50-150
STL00995	13C5 PFNA	84		50-150
STL00992	13C4 PFBA	74		25-150
STL00993	13C2 PFHxA	84		50-150
STL00996	13C2 PFDA	84		50-150
STL00997	13C2 PFUnA	79		50-150
STL00998	13C2 PFDoA	64		50-150
STL01056	13C8 FOSA	50		25-150
STL01893	13C5 PFPeA	95		25-150
STL02116	13C2 PFTeDA	59		50-150
STL02118	d3-NMeFOSAA	63		50-150
STL02117	d5-NEtFOSAA	69		50-150
STL02279	M2-6:2 FTS	125		25-150
STL02280	M2-8:2 FTS	88		25-150
STL02337	13C3 PFBS	81		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
 Lims ID: 480-147040-A-2-A
 Client ID: EB-01-121918
 Sample Type: Client
 Inject. Date: 08-Jan-2019 10:57:47 ALS Bottle#: 0 Worklist Smp#: 68
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-068 2
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:37:02 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303

First Level Reviewer: chirgwinb Date: 08-Jan-2019 16:48:52
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.392	2.402	-0.010	1.000	313956	37.1	74.3	96.5	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.371	2.402	-0.031	0.991	1163	0.0282			3.3	M
D 3 13C5 PFPeA	267.7 > 222.6	2.801	2.818	-0.017	1.000	254074	47.4	94.8	636	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.781	2.818	-0.037	0.993	399	0.0276			1.5	M
D 6 13C3 PFBS	302.0 > 79.8	2.883	2.900	-0.017	1.000	167277	37.8	81.3	564	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.834	2.900	-0.066	0.983	204	0.0325			1.7	M
D 7 13C2 PFHxA	314.8 > 269.6	3.214	3.250	-0.036	1.000	405064	42.0	83.9	1122	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.300	3.250	0.050	1.027	484	0.0576			4.0	M
D 9 13C4 PFHpA	366.9 > 321.8	3.726	3.782	-0.056	1.000	724120	41.0	81.9	688	
10 Perfluoroheptanoic acid										M
362.9 > 318.8	3.715	3.782	-0.067	0.997	666	0.0470			3.6	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.793	3.815	-0.022	1.009	591	-0.1575			8.4	M
D 11 18O2 PFHxS	402.9 > 83.8	3.759	3.826	-0.067	1.000	230618	45.1	95.3	187	M
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.411	-0.081	1.000	93400	59.2	125	1071	
14 1H,1H,2H,2H-perfluorooctanesulfoni										M
426.6 > 406.6	4.449	4.411	0.038	1.028	90.0382				1.7	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.374	4.449	-0.075	1.000	1188	0.1060			7.5	M
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.468	-0.094	1.000	565918	41.9		83.8	2342	
* 15 13C2 PFOA										M
414.9 > 369.8	4.374	4.468	-0.094		719350	50.0			4093	M
D 20 13C5 PFNA										
467.8 > 422.8	5.127	5.222	-0.095	1.000	762898	41.9		83.8	973	
D 22 13C4 PFOS										
502.8 > 79.8	5.140	5.236	-0.096	1.000	206226	45.5		95.3	359	
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	5.140	5.250	-0.110	1.000	673	0.1509			8.7	M
23 1H,1H,2H,2H-perfluorodecanesulfoni										M
526.8 > 506.5	5.863	5.998	-0.135	0.997	92	0.0303			0.8	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.998	-0.116	1.000	180180	42.1		88.0	1256	
25 Perfluorodecanoic acid										M
512.9 > 468.5	5.902	6.022	-0.120	1.000	78	0.004914			0.4	M
D 26 13C2 PFDA										
514.9 > 469.5	5.902	6.022	-0.120	1.000	786162	41.9		83.8	5237	
28 N-methylperfluorooctanesulfonamido										M
569.8 > 418.8	6.241	6.367	-0.126	0.997	258	0.0791			1.0	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.367	-0.108	1.000	150226	31.3		62.7	917	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.616	6.734	-0.118	1.000	141048	34.7		69.3	990	
31 Perfluorodecanesulfonic acid										M
598.8 > 79.8	6.748	6.762	-0.014	1.313	141	0.0312			2.4	M
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.777	-0.107	1.000	770225	39.4		78.8	2304	
33 Perfluoroundecanoic acid										M
562.8 > 518.6	6.598	6.777	-0.179	0.989	579	0.0366			4.8	M
D 35 13C8 FOSA										M
505.8 > 77.8	6.917	6.945	-0.028	1.000	216340	24.8		49.6	1888	M
34 Perfluorooctanesulfonamide										M
497.8 > 77.8	6.861	6.959	-0.098	0.992	165	0.0451			2.8	M
D 37 13C2 PFDoA										
614.8 > 569.6	7.339	7.474	-0.135	1.000	793637	32.1		64.2	1953	
36 Perfluorododecanoic acid										M
612.8 > 568.6	7.429	7.474	-0.045	1.012	77	0.005651			0.7	M
38 Perfluorotridecanoic acid										M
662.8 > 618.6	7.936	8.097	-0.161	0.932	207	0.0159			3.9	M
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.484	8.666	-0.182	0.996	181	0.0139	Target=1.00		2.6	M
712.8 > 168.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
712.8 > 218.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 40 13C2 PFTeDA

714.8 > 669.6 8.514 8.681 -0.167 1.000 665616 29.3 58.7 2692

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d

Injection Date: 08-Jan-2019 10:57:47

Instrument ID: LC410

Lims ID: 480-147040-A-2-A

Lab Sample ID: 200-147040-2

Client ID: EB-01-121918

Operator ID: BC

ALS Bottle#: 0 Worklist Smp#: 68

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

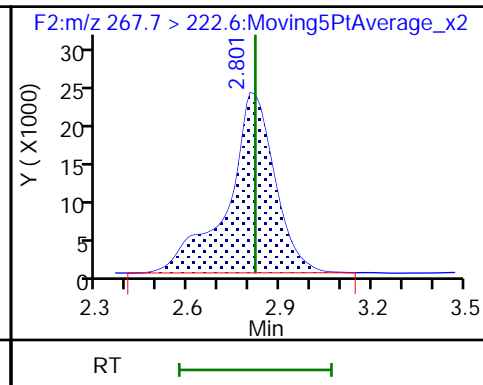
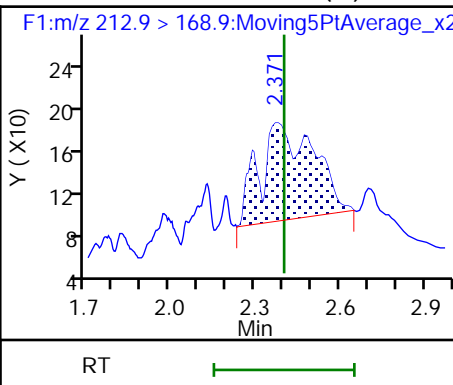
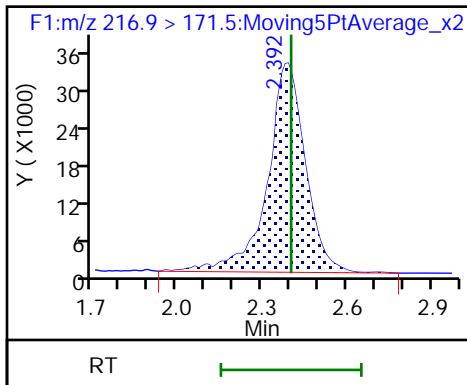
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

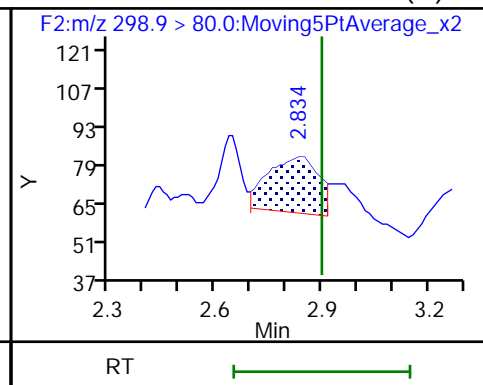
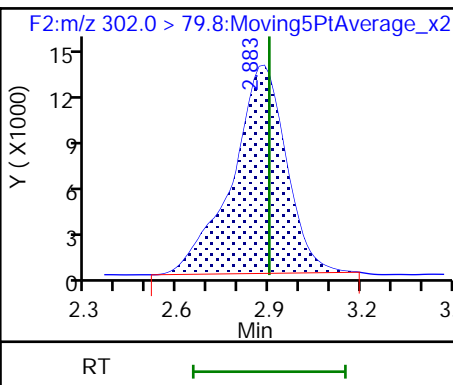
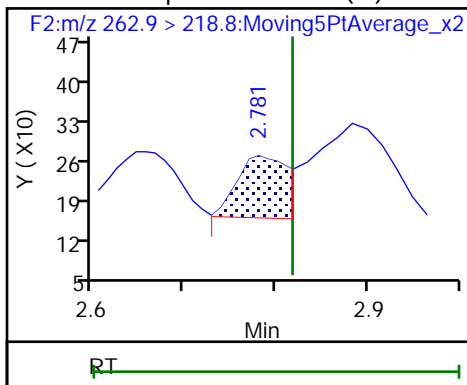
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

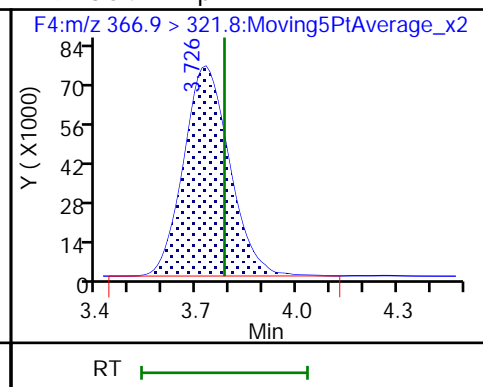
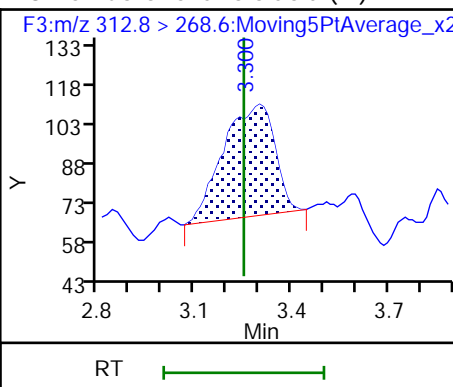
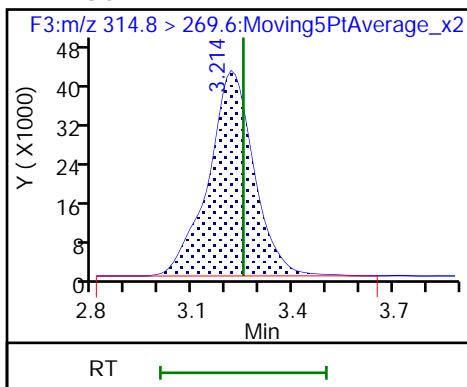
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

8 Perfluorohexanoic acid (M)

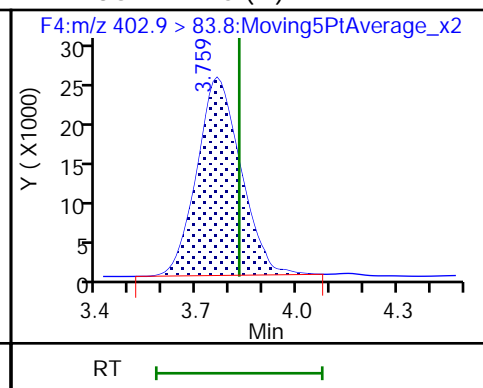
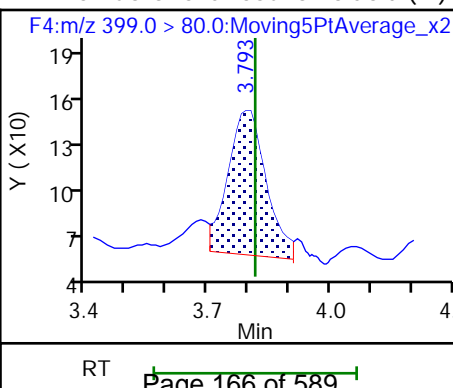
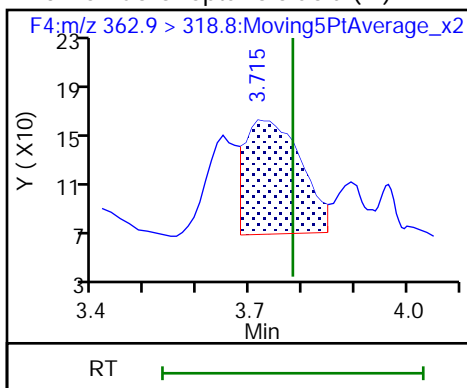
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

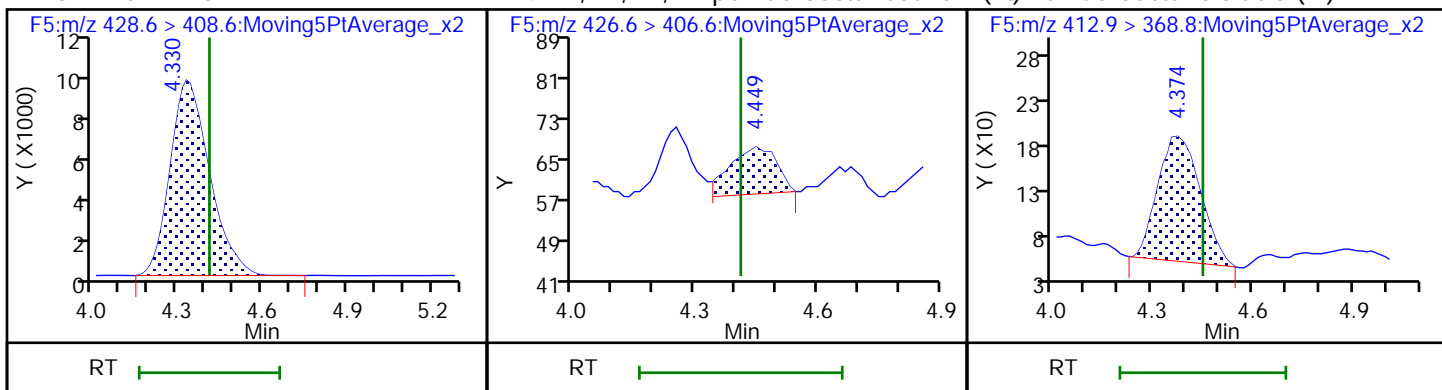
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS (M)



D 13 M2-6:2 FTS

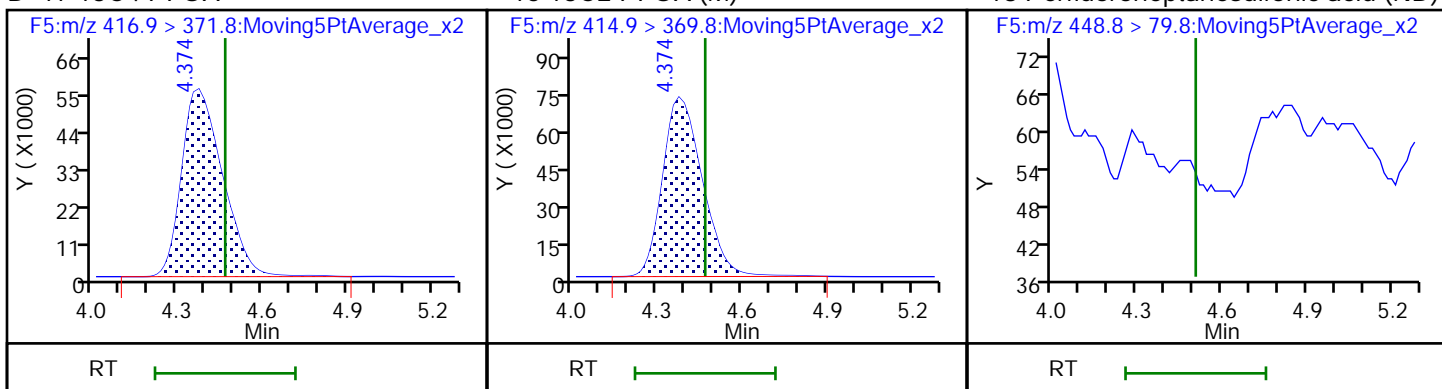
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA (M)

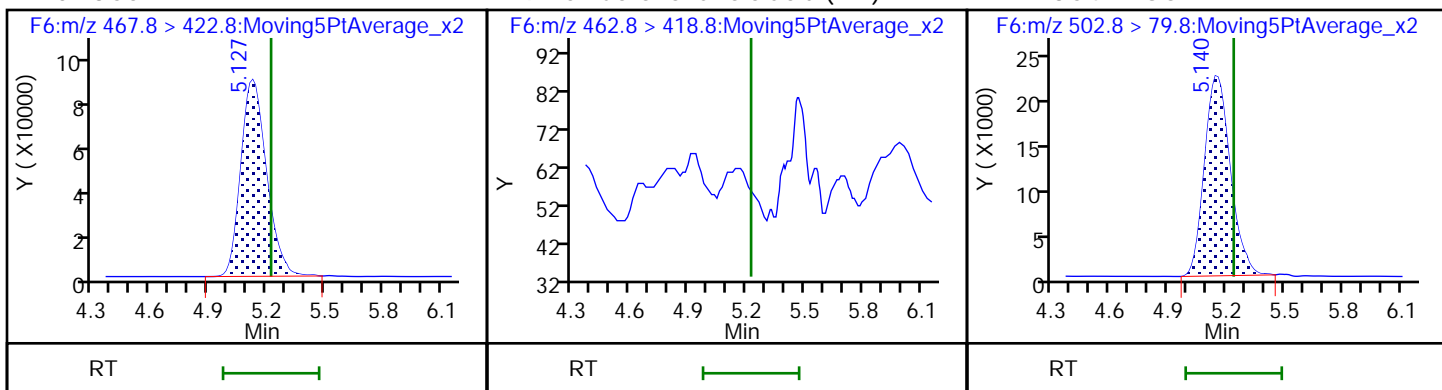
18 Perfluoroheptanesulfonic acid (ND)



D 20 13C5 PFNA

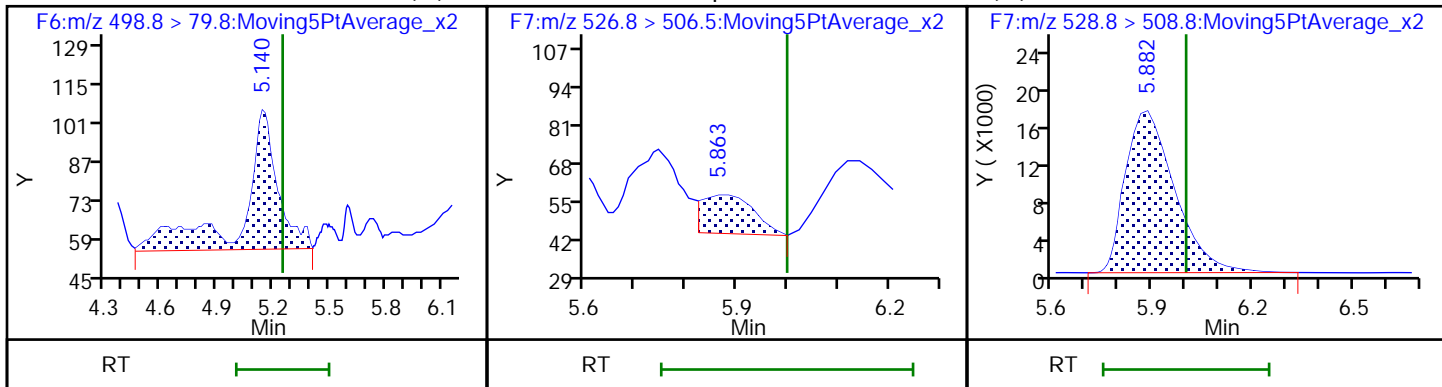
19 Perfluorononanoic acid (ND)

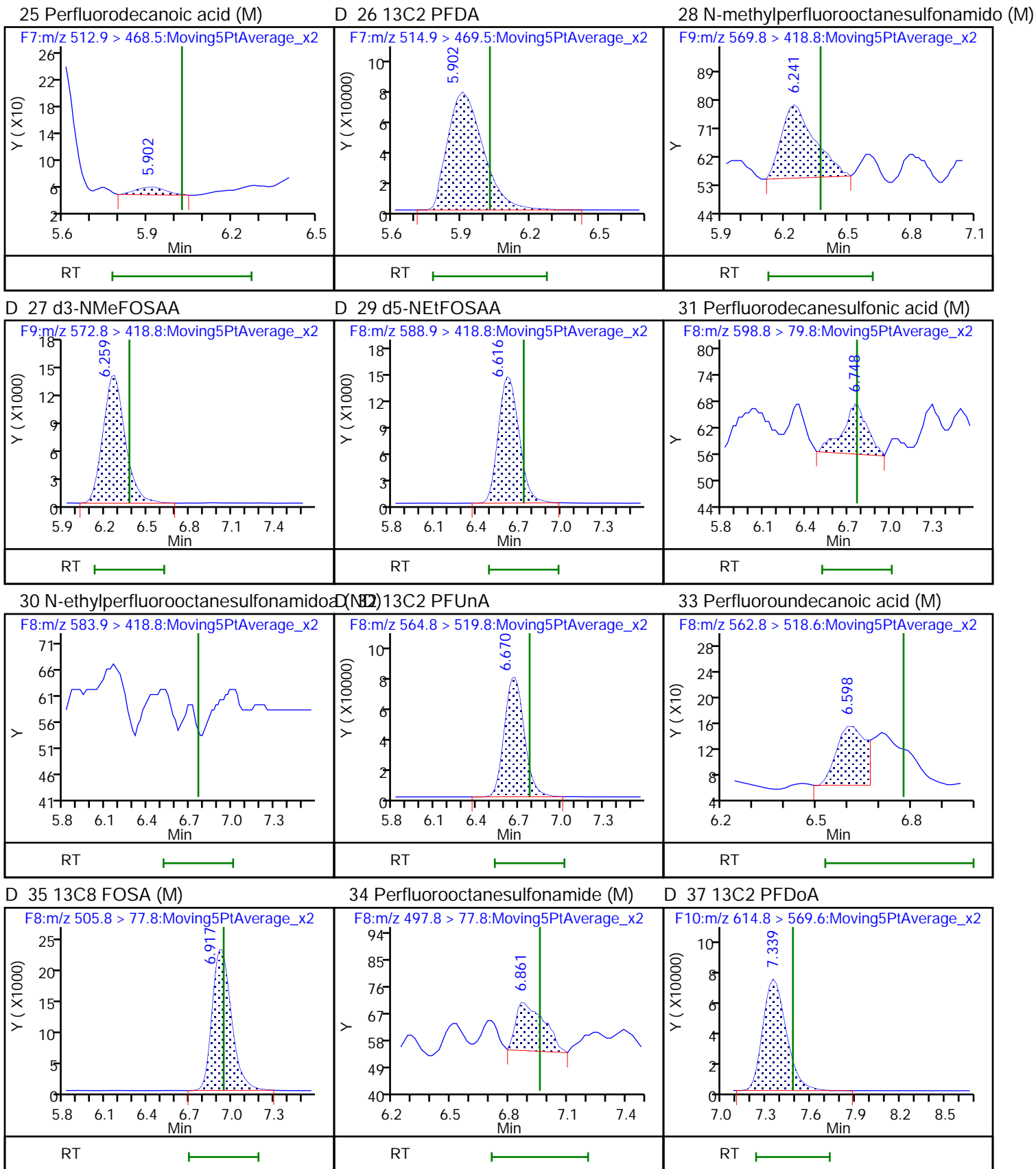
D 22 13C4 PFOS

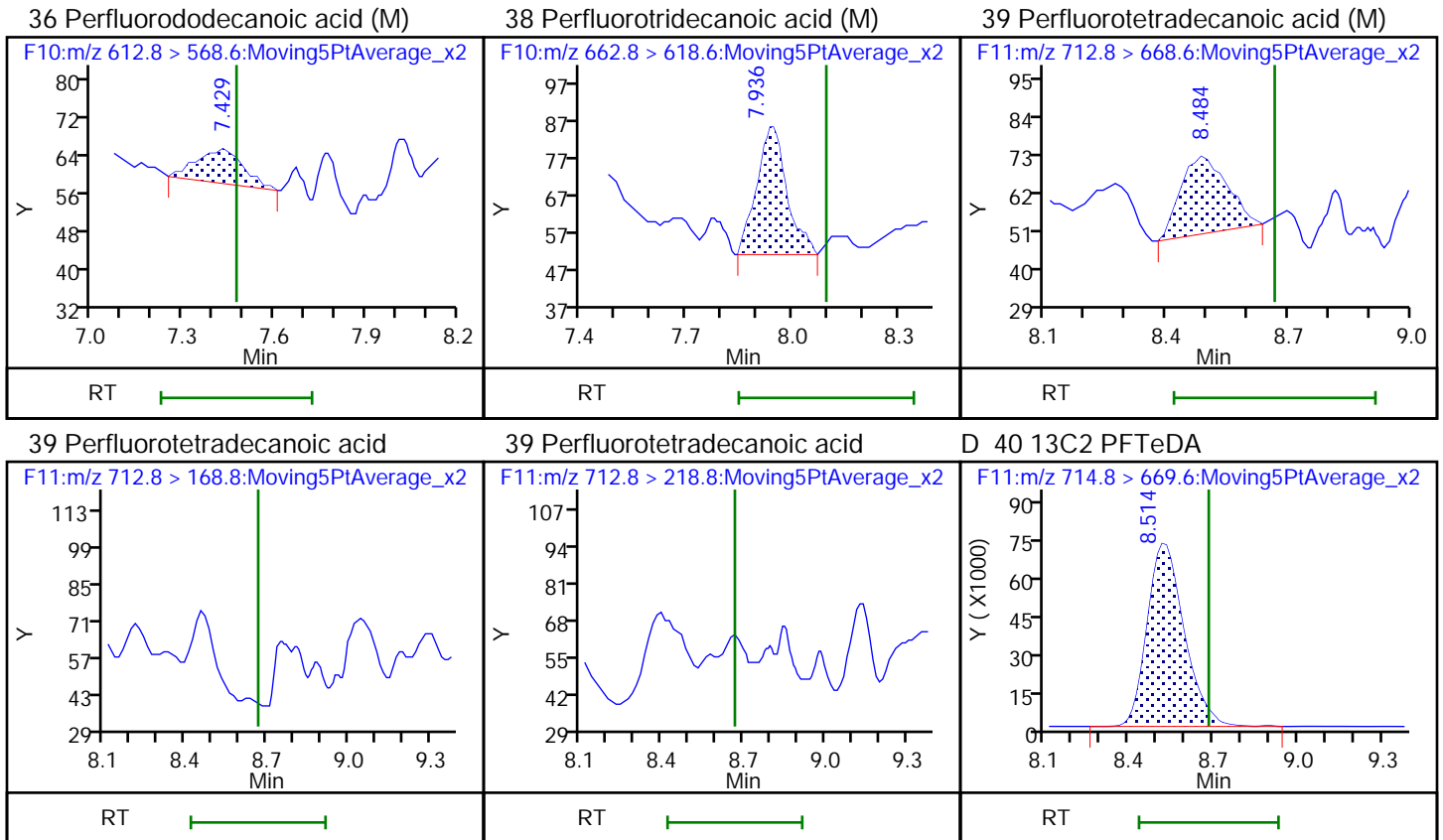


21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfoni (M) M2-8:2 FTS







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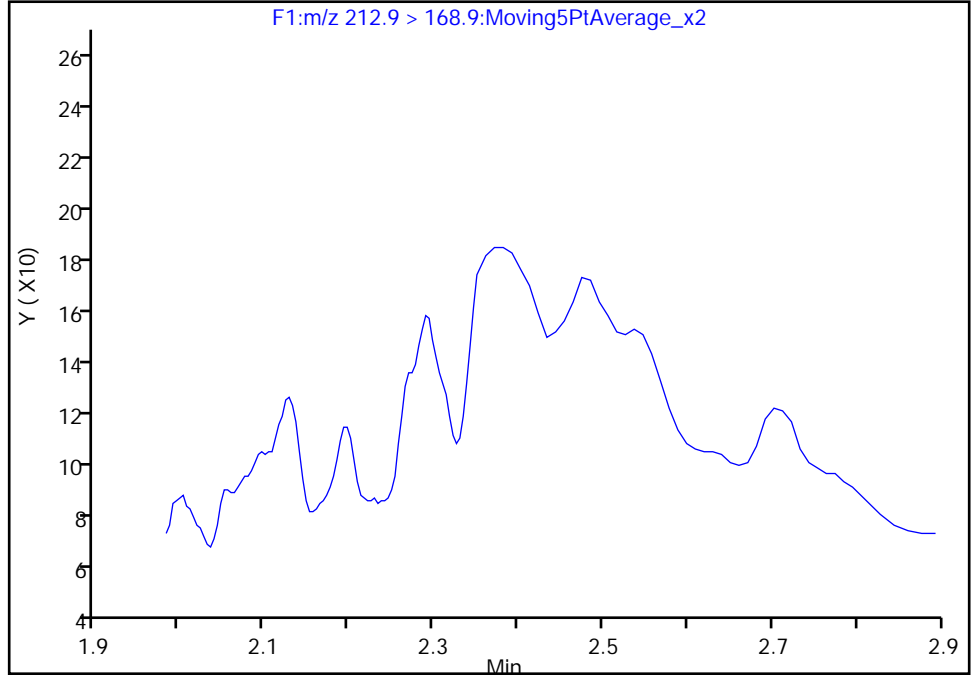
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

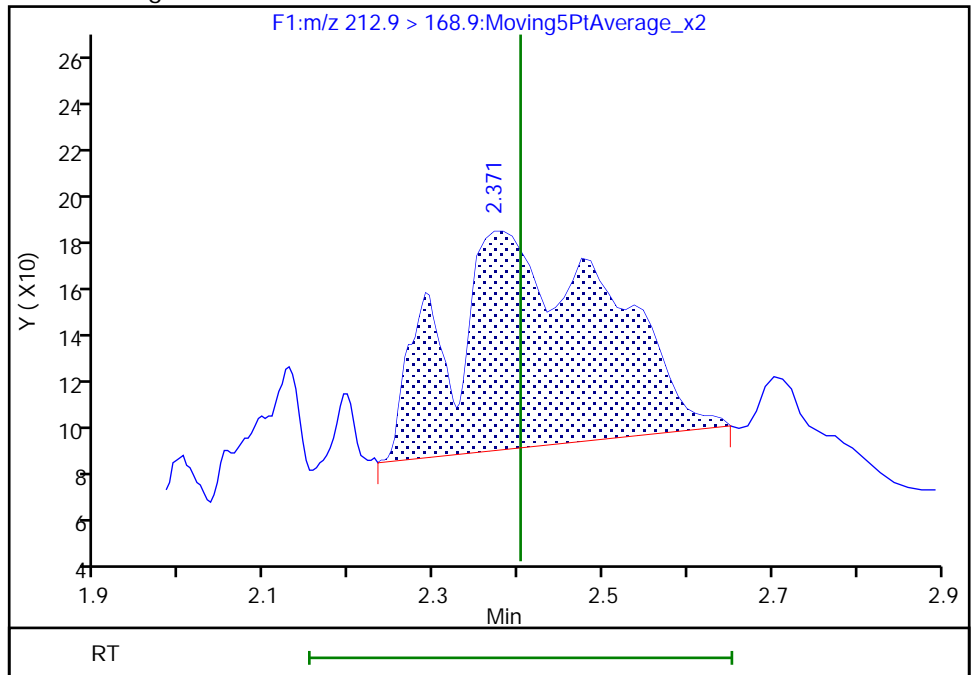
Not Detected
Expected RT: 2.40

Processing Integration Results



Manual Integration Results

RT: 2.37
Area: 1163
Amount: 0.028177
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:48:49
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

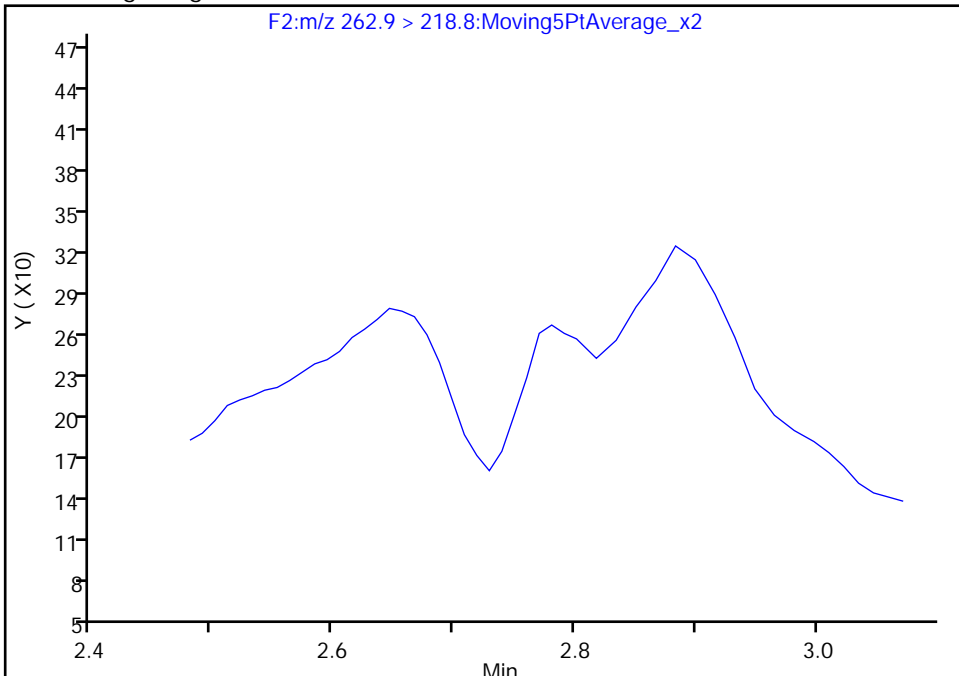
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

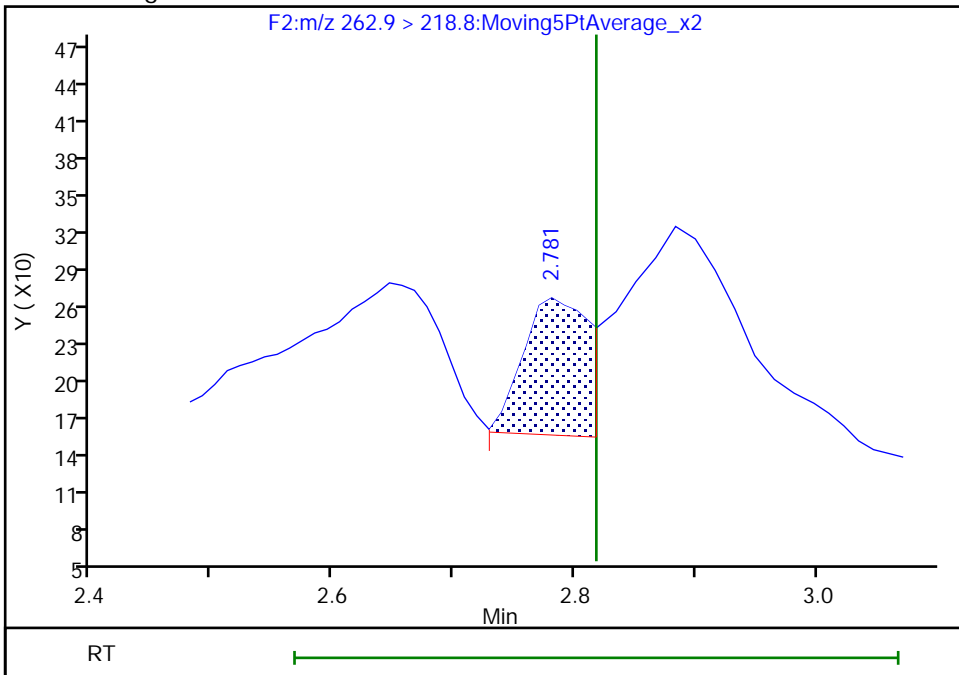
Not Detected
Expected RT: 2.82

Processing Integration Results



Manual Integration Results

RT: 2.78
Area: 399
Amount: 0.027571
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:48:34
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

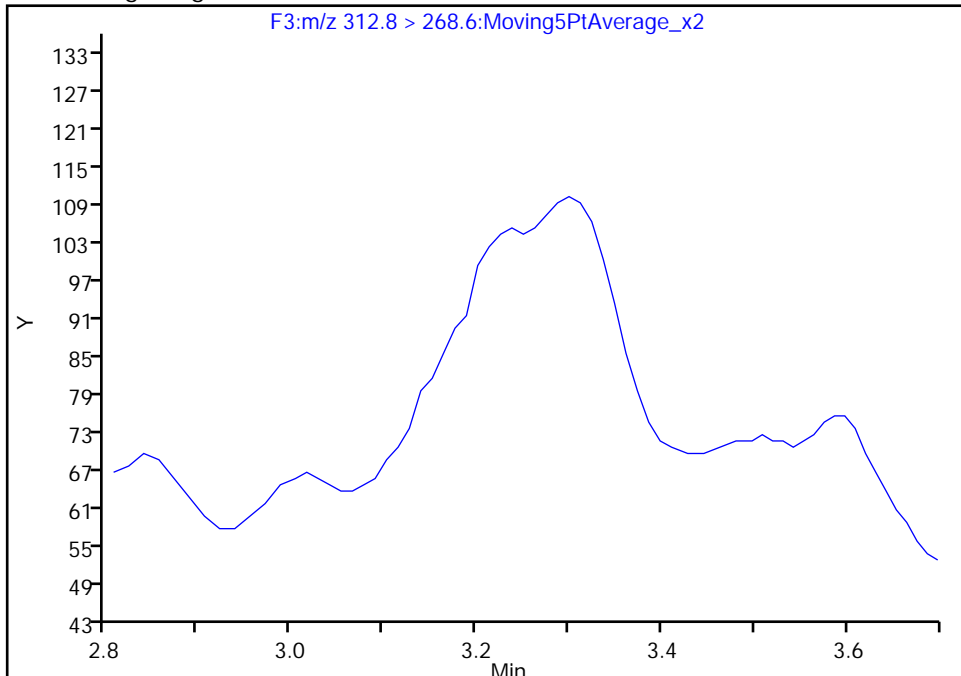
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

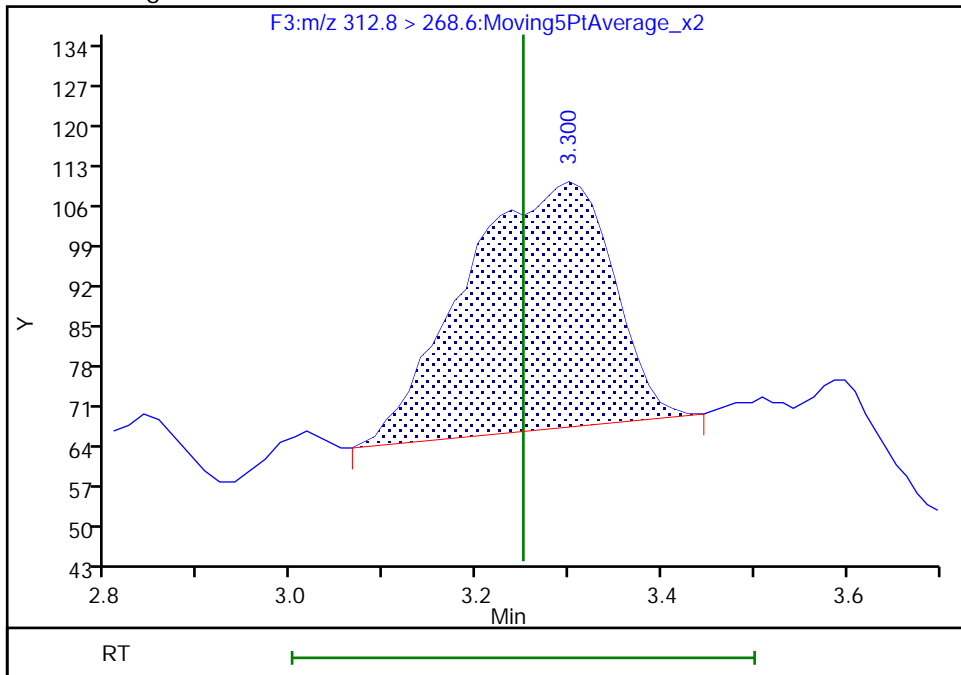
Not Detected
Expected RT: 3.25

Processing Integration Results



Manual Integration Results

RT: 3.30
Area: 484
Amount: 0.057581
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:48:12
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

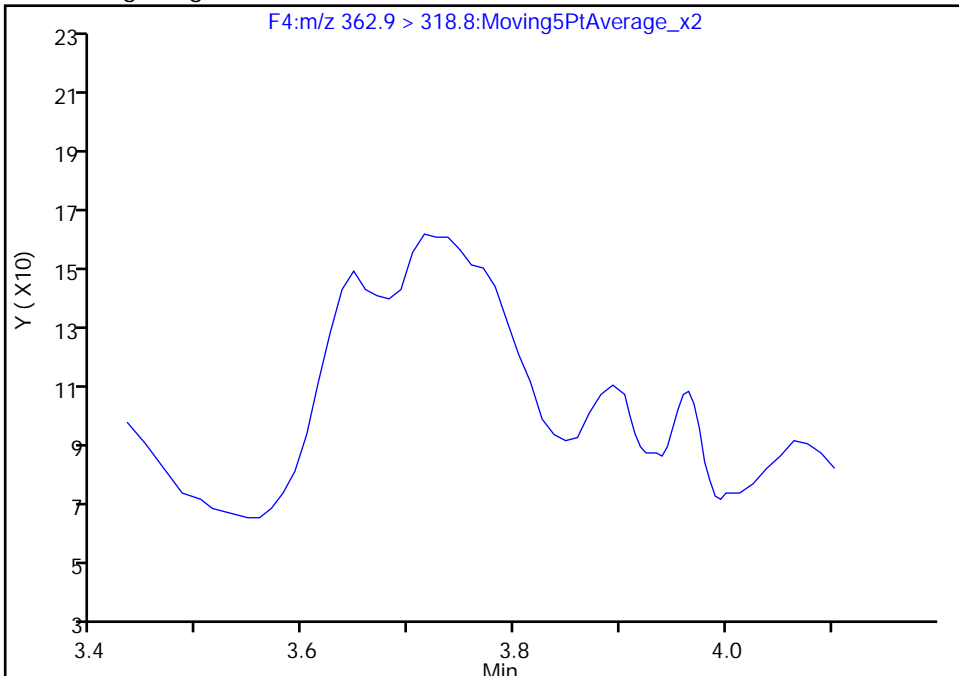
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

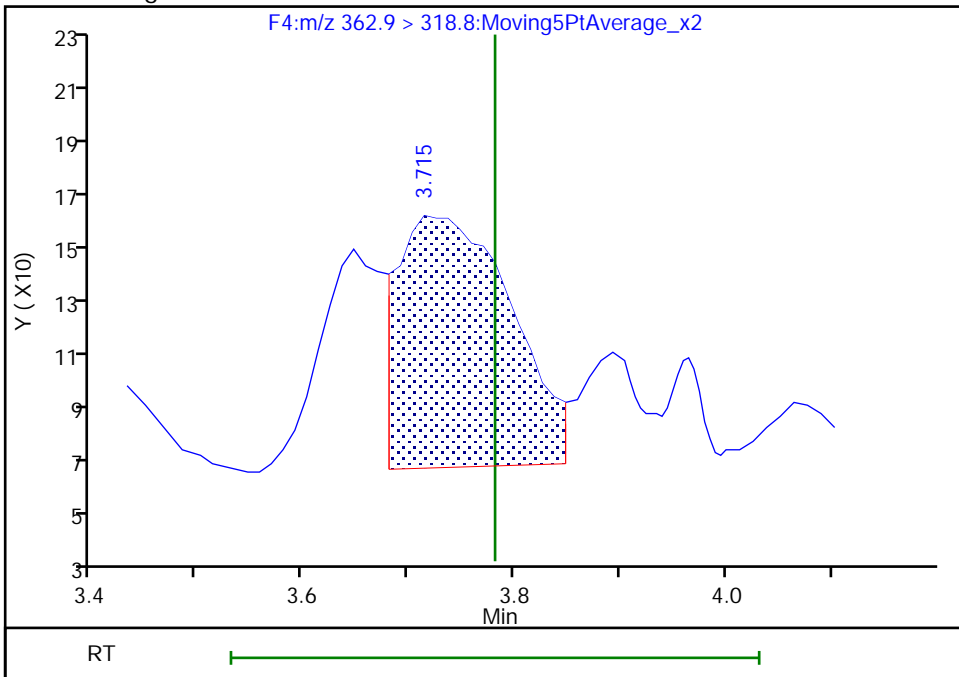
Not Detected
Expected RT: 3.78

Processing Integration Results



Manual Integration Results

RT: 3.71
Area: 666
Amount: 0.047048
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:48:07
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

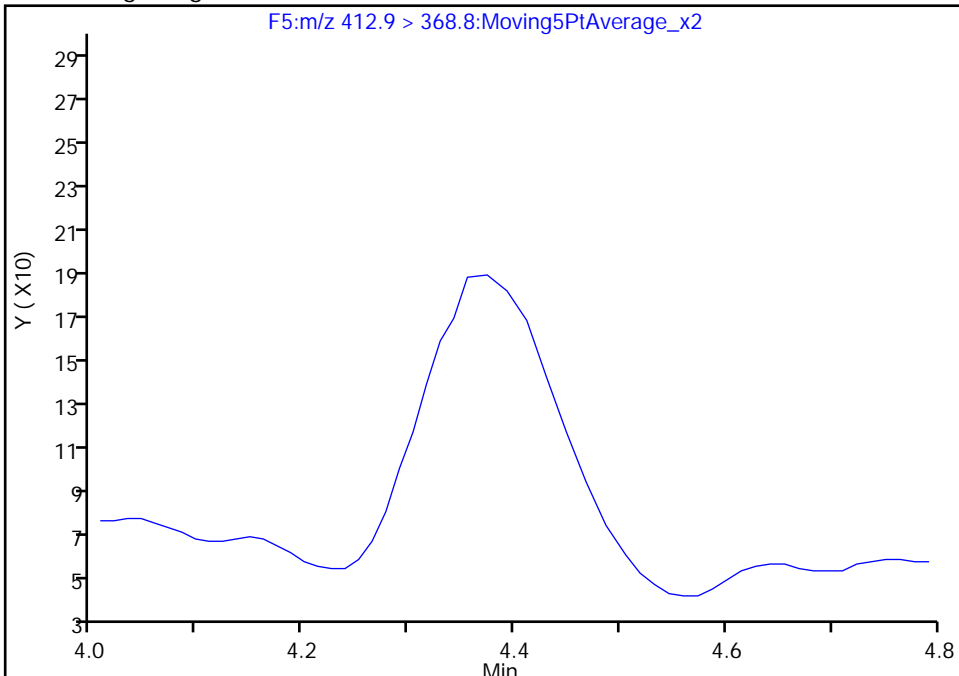
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

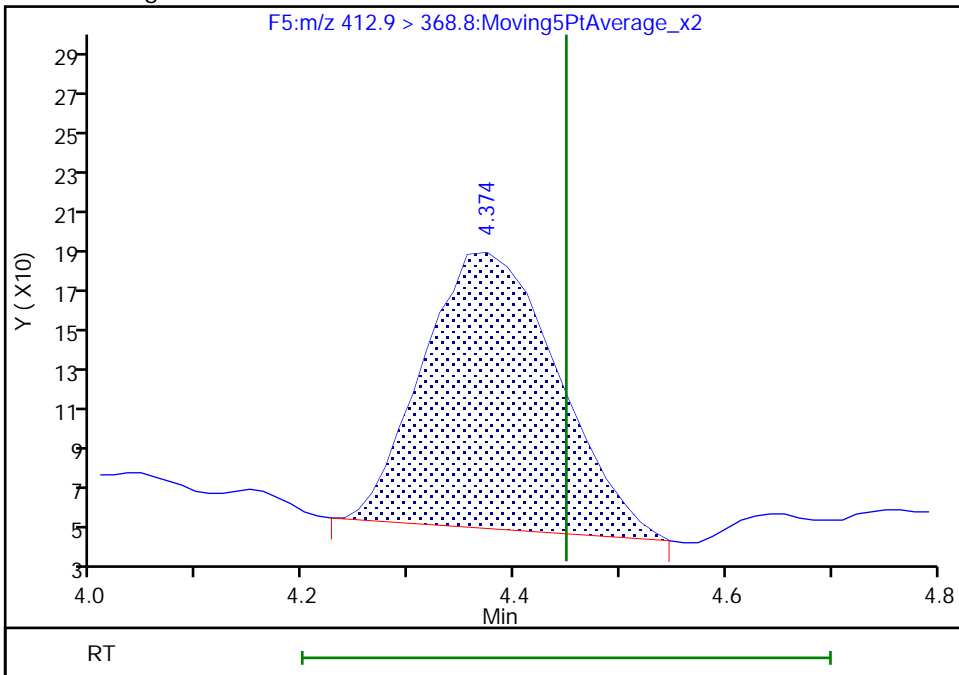
Not Detected
Expected RT: 4.45

Processing Integration Results



Manual Integration Results

RT: 4.37
Area: 1188
Amount: 0.106032
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:47:41
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

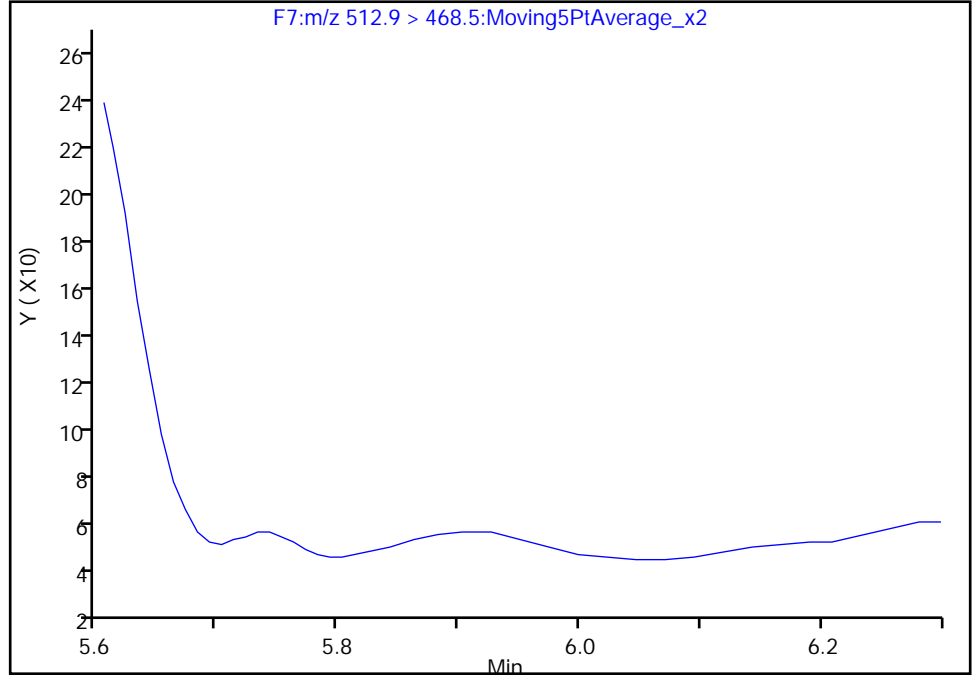
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

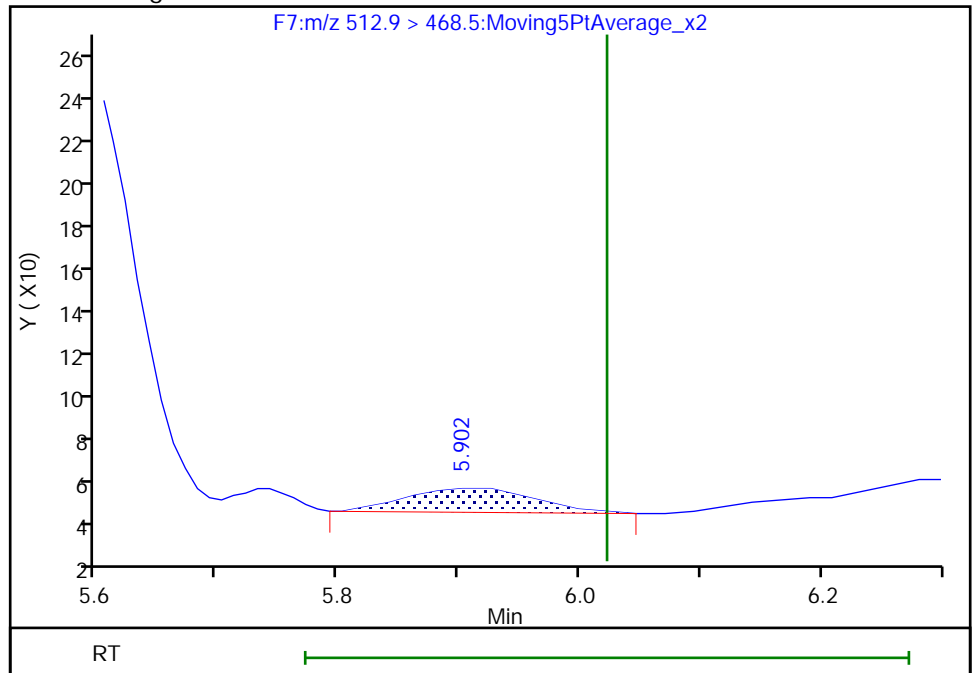
Not Detected
Expected RT: 6.02

Processing Integration Results



Manual Integration Results

RT: 5.90
Area: 78
Amount: 0.004914
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:47:13
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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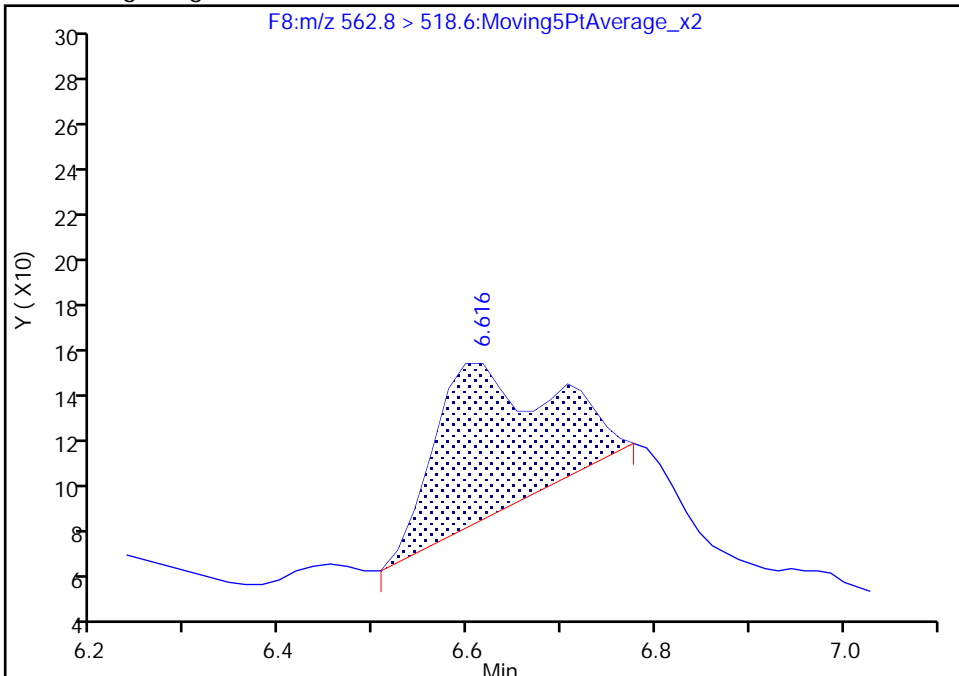
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

33 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

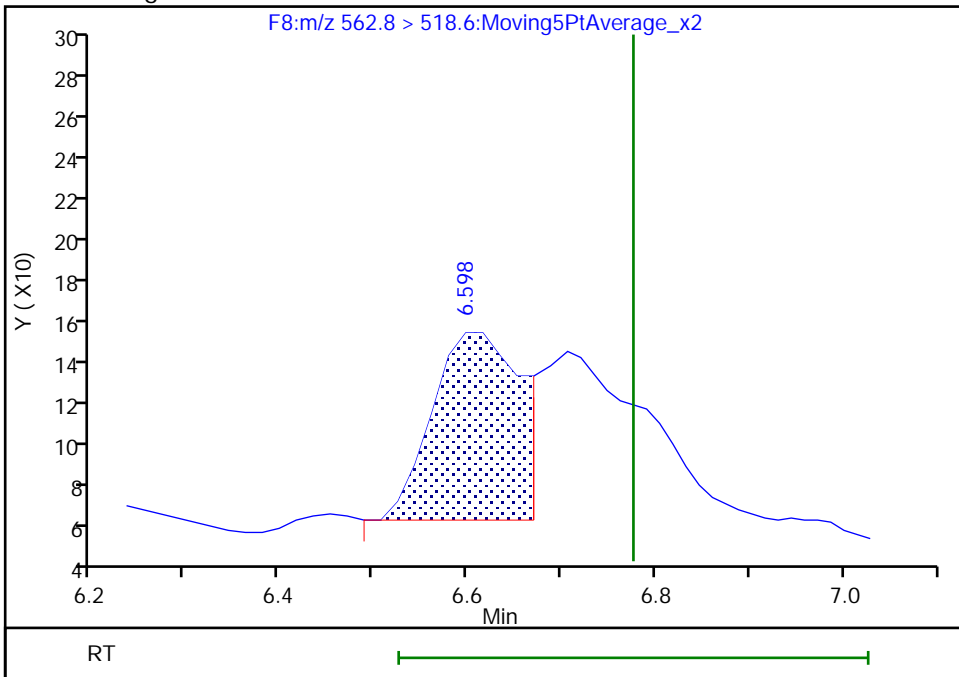
RT: 6.62
Area: 577
Amount: 0.036511
Amount Units: ng/ml

Processing Integration Results



RT: 6.60
Area: 579
Amount: 0.036638
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:46:24
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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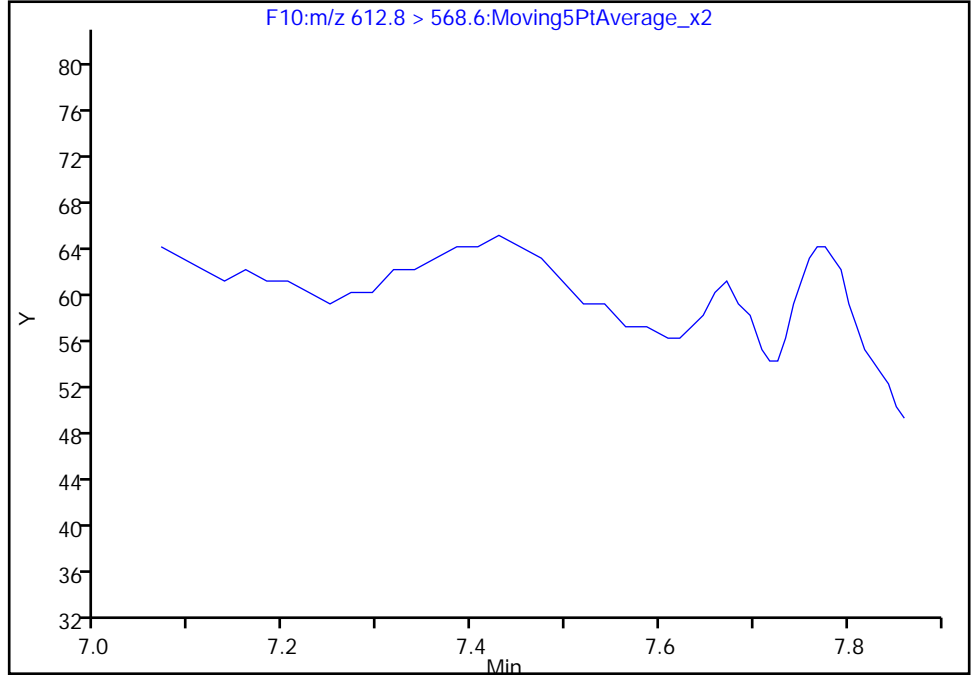
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

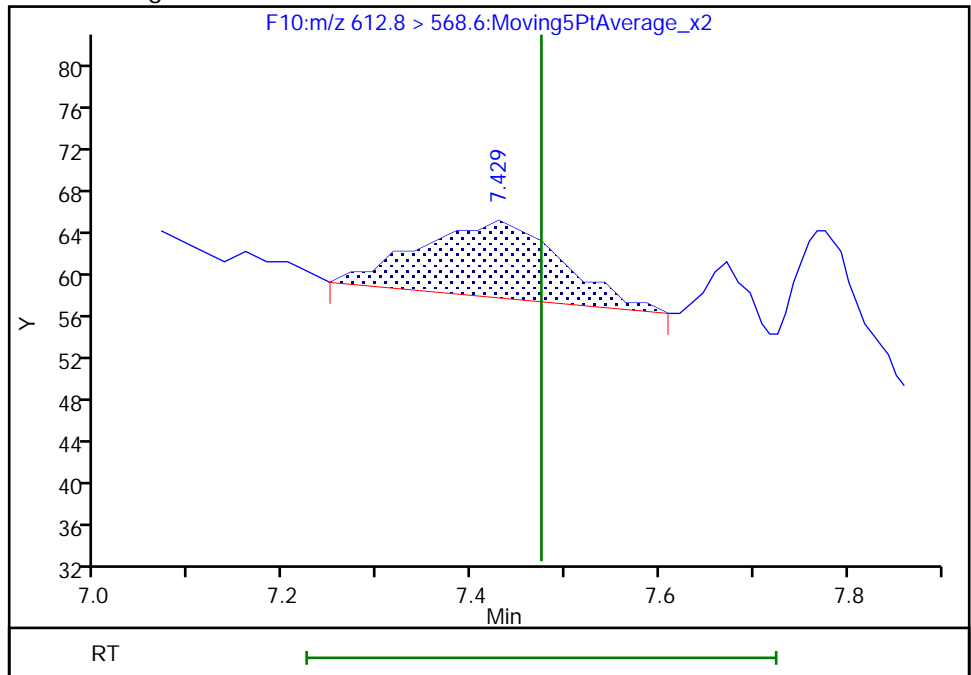
Not Detected
Expected RT: 7.47

Processing Integration Results



Manual Integration Results

RT: 7.43
Area: 77
Amount: 0.005651
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:46:51
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

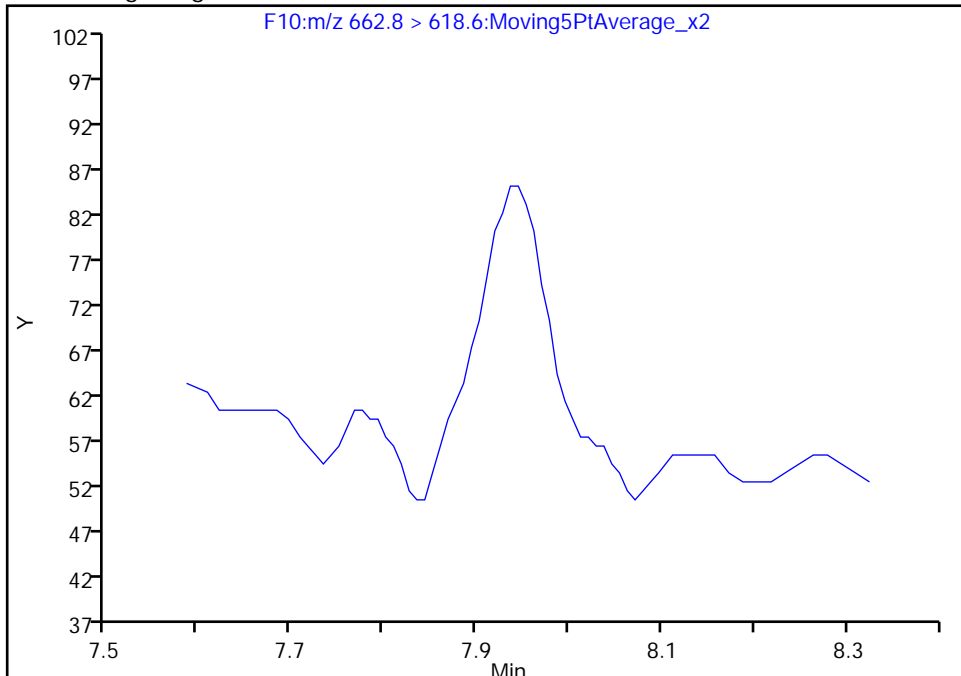
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

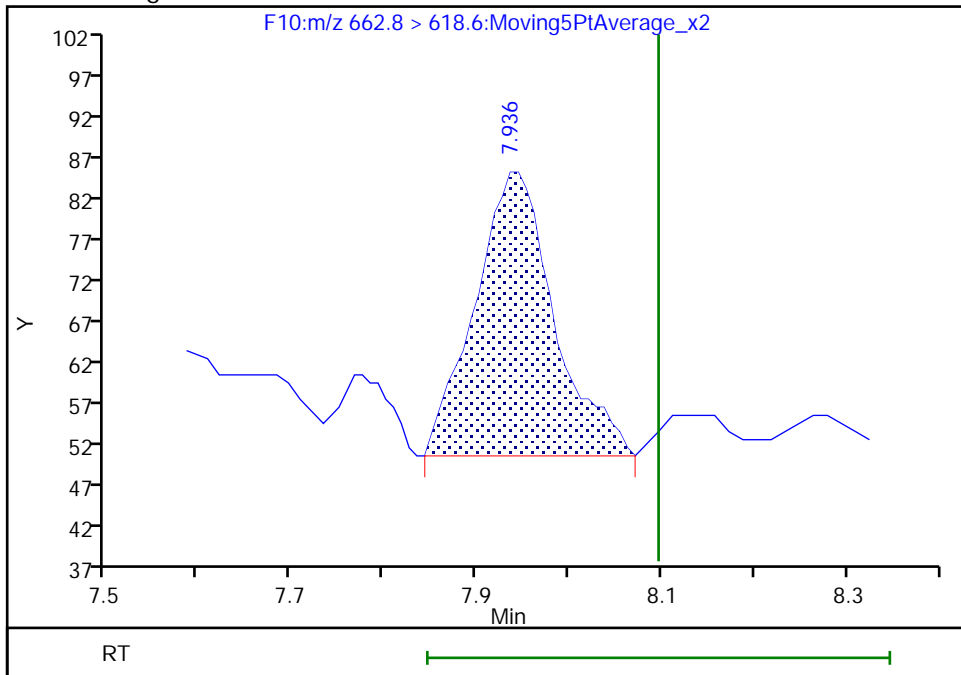
Not Detected
Expected RT: 8.10

Processing Integration Results



Manual Integration Results

RT: 7.94
Area: 207
Amount: 0.015908
Amount Units: ng/ml



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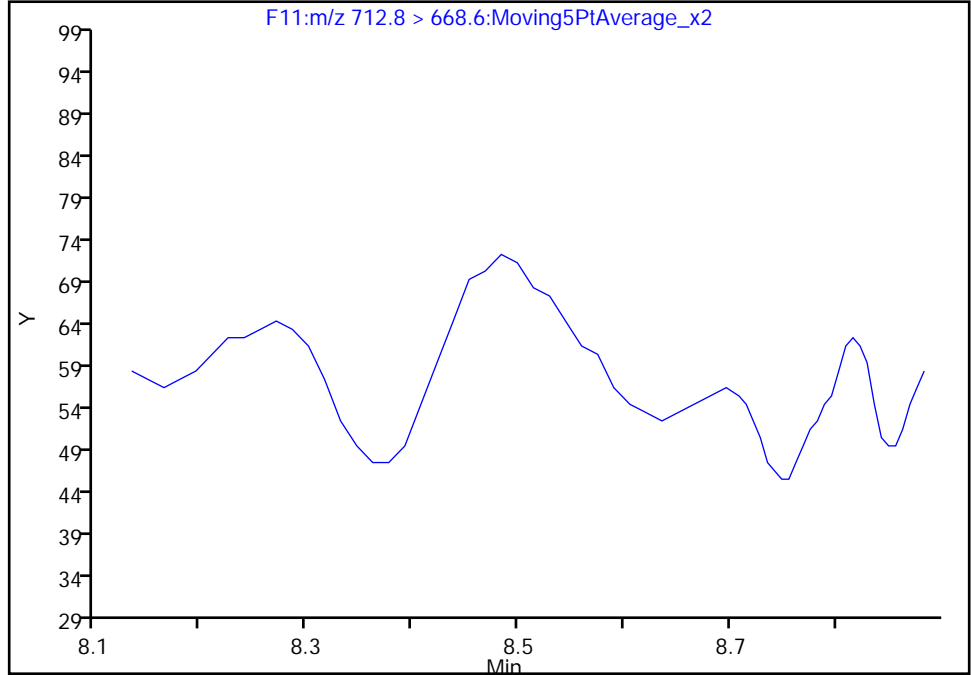
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Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

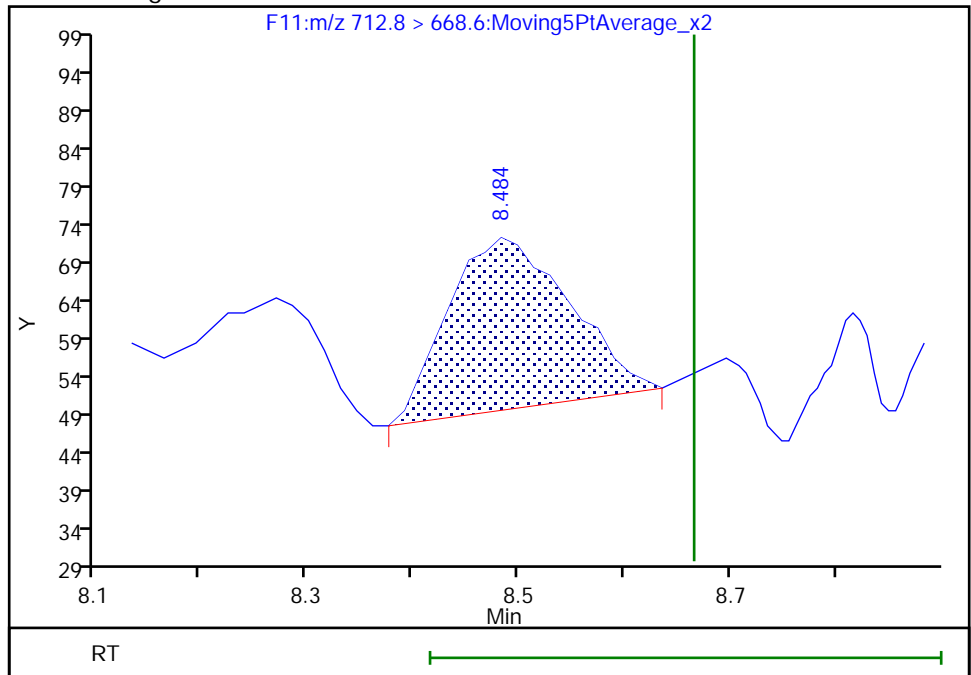
Not Detected
Expected RT: 8.67

Processing Integration Results



RT: 8.48
Area: 181
Amount: 0.013948
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:46:42
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

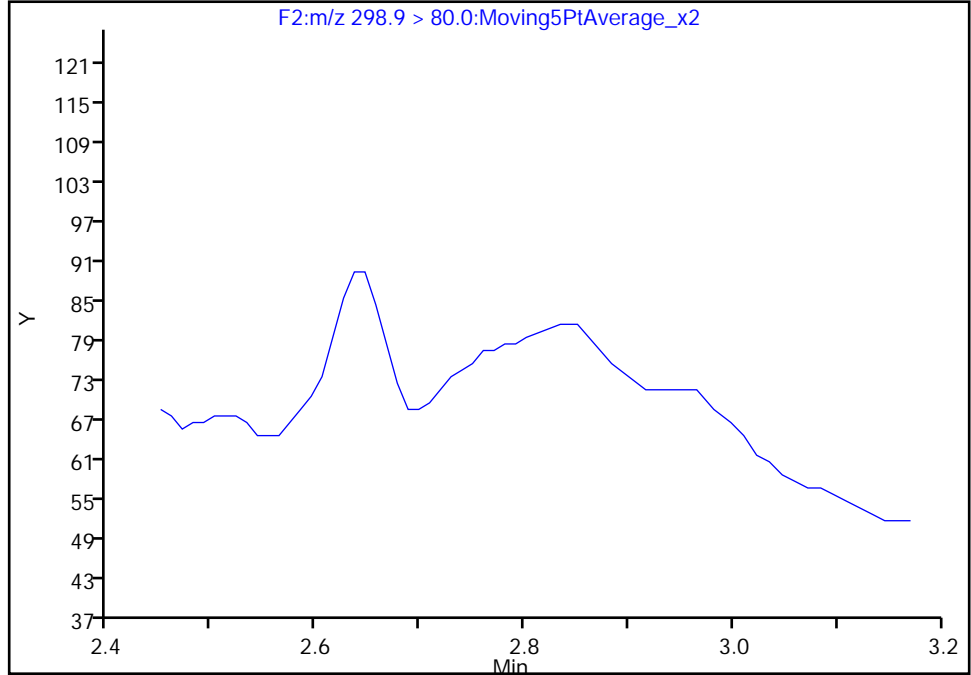
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

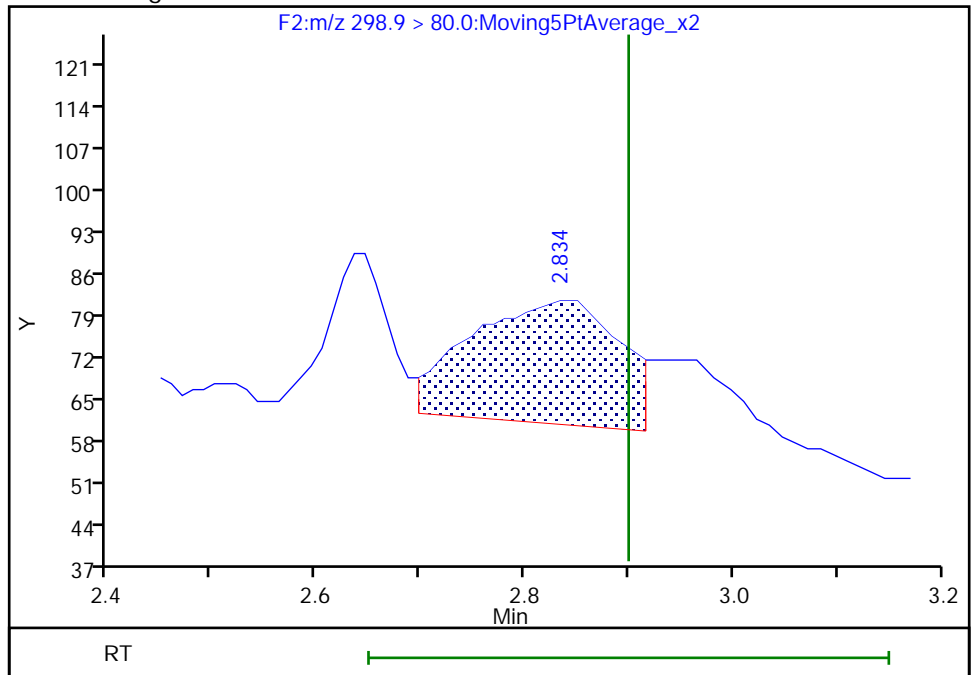
Not Detected
Expected RT: 2.90

Processing Integration Results



RT: 2.83
Area: 204
Amount: 0.032497
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:48:23
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

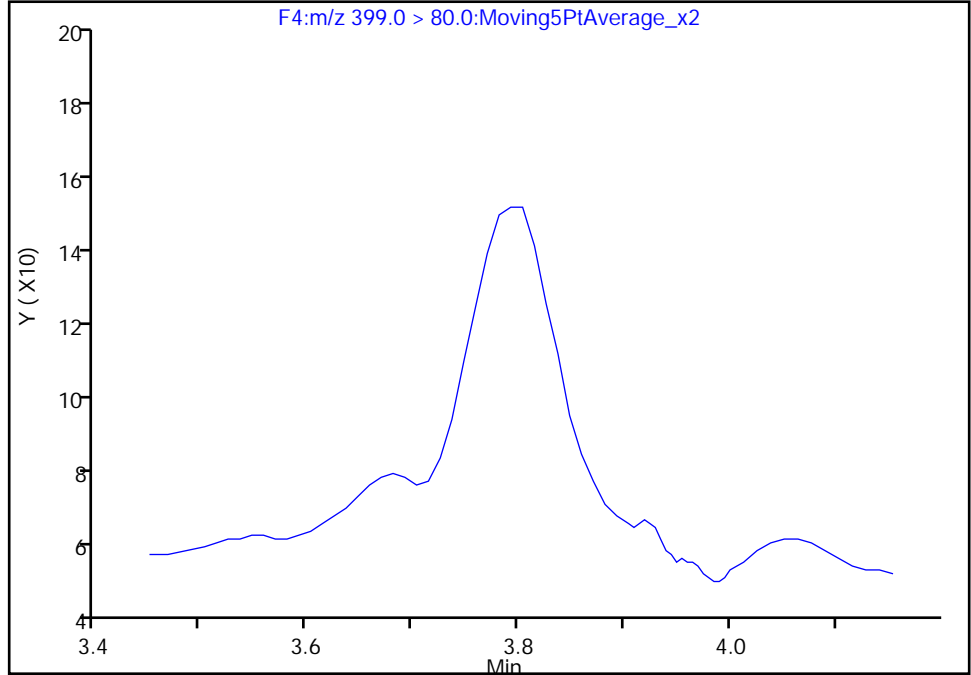
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

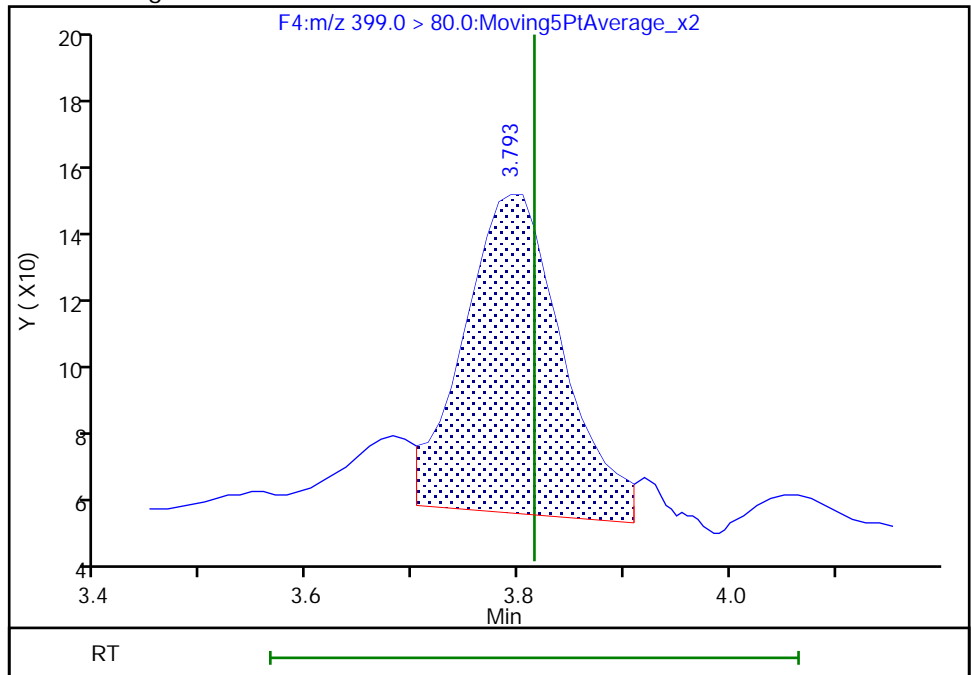
Not Detected
Expected RT: 3.81

Processing Integration Results



Manual Integration Results

RT: 3.79
Area: 591
Amount: -0.157524
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:47:57
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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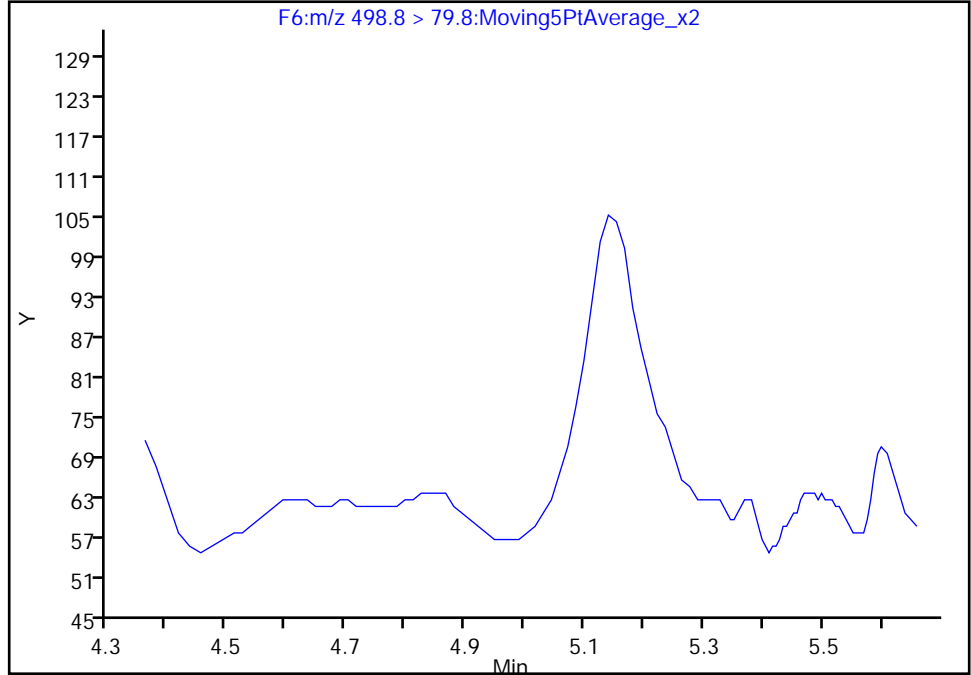
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

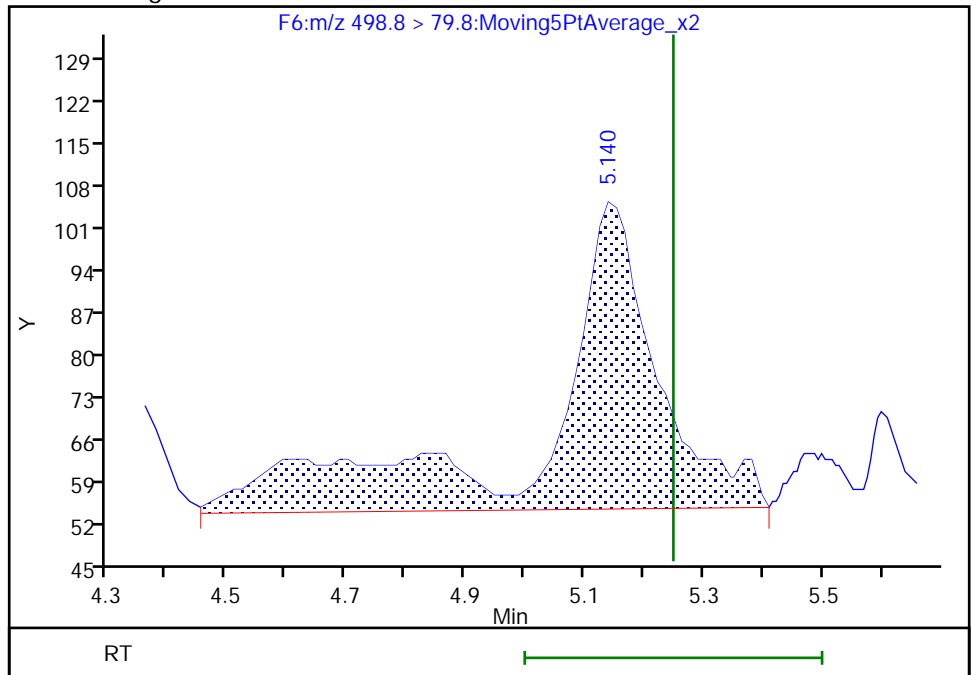
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 5.14
Area: 673
Amount: 0.150906
Amount Units: ng/ml



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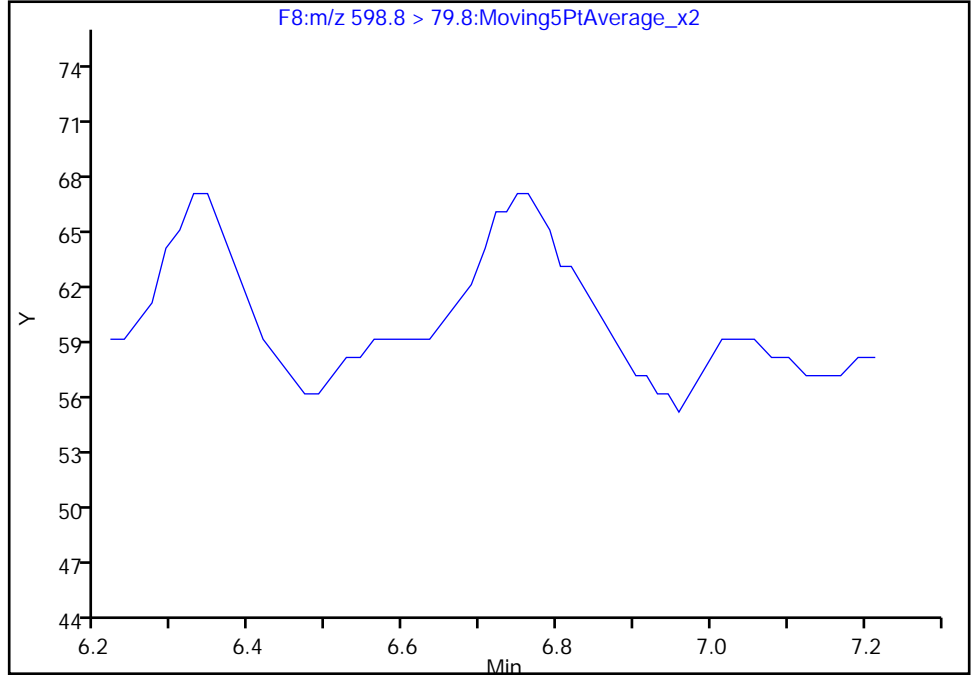
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

31 Perfluorodecanesulfonic acid, CAS: 335-77-3

Signal: 1

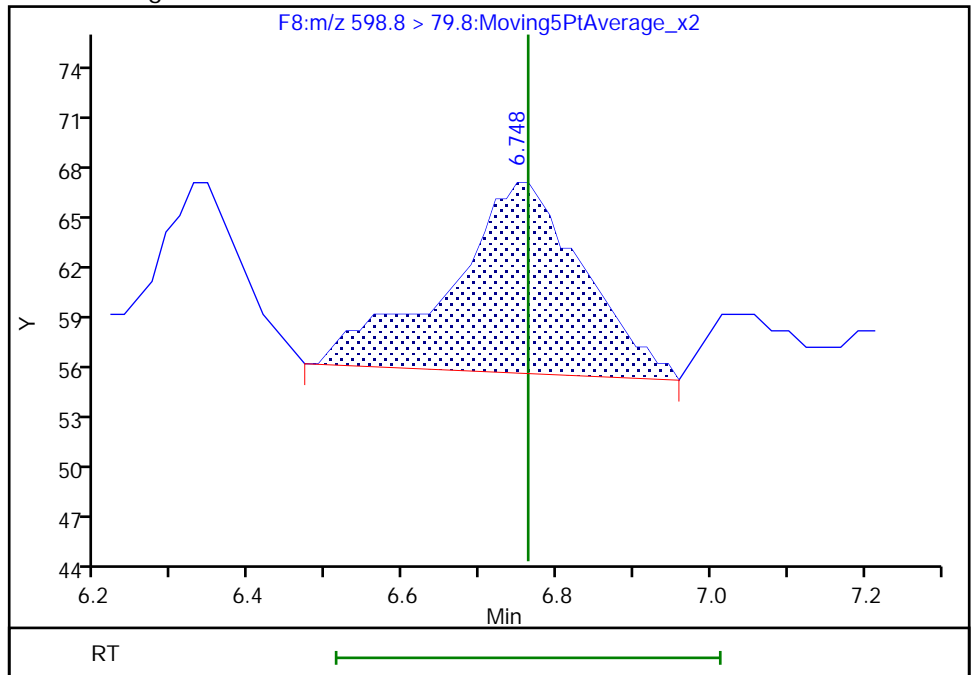
Not Detected
Expected RT: 6.76

Processing Integration Results



Manual Integration Results

RT: 6.75
Area: 141
Amount: 0.031242
Amount Units: ng/ml



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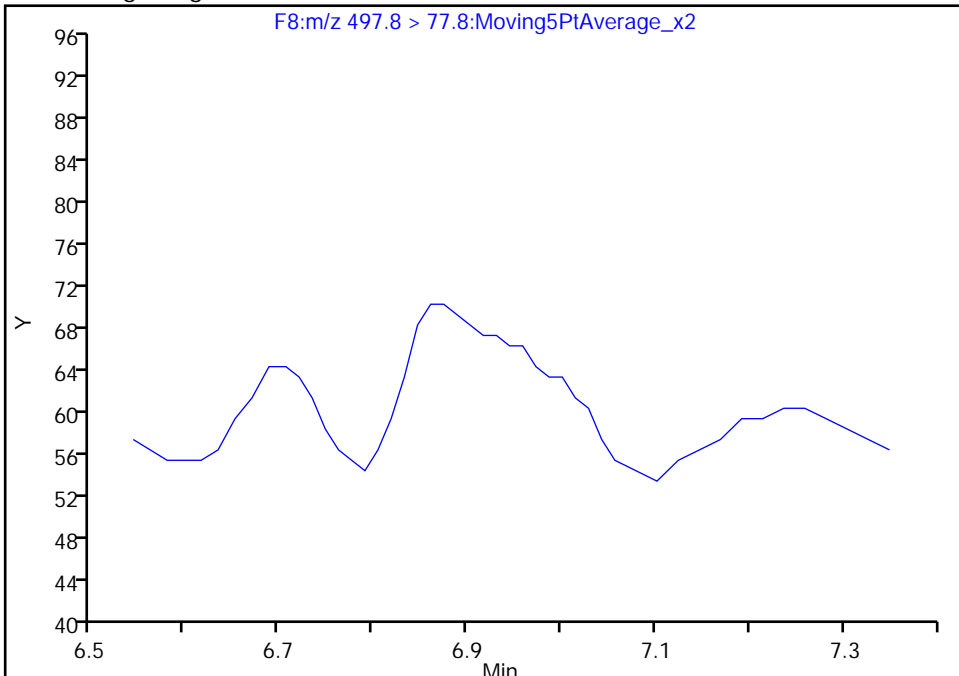
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

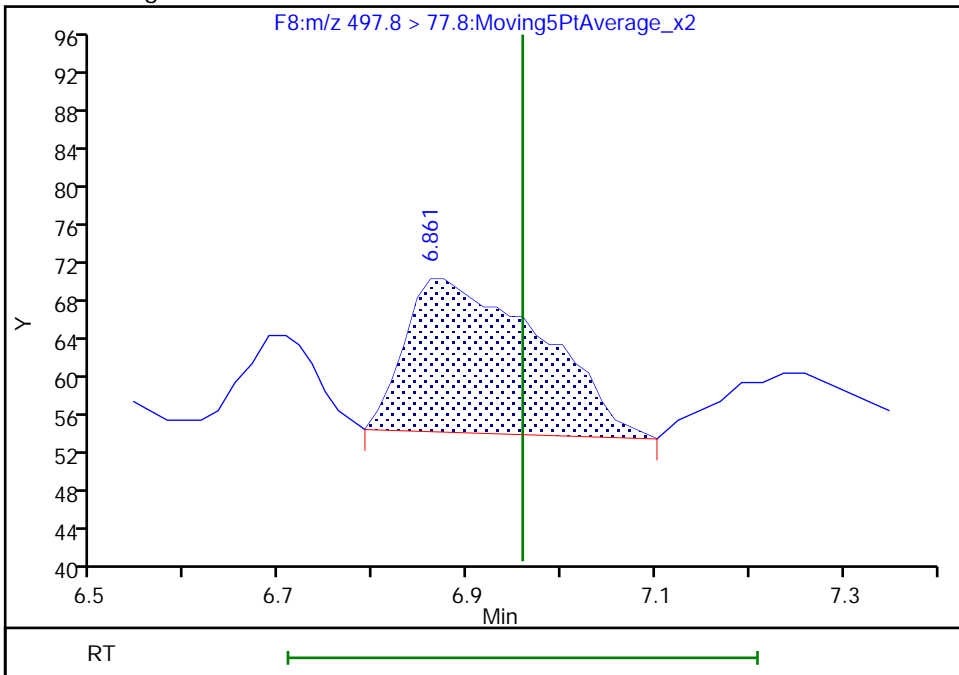
Not Detected
Expected RT: 6.96

Processing Integration Results



Manual Integration Results

RT: 6.86
Area: 165
Amount: 0.045067
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:46:54
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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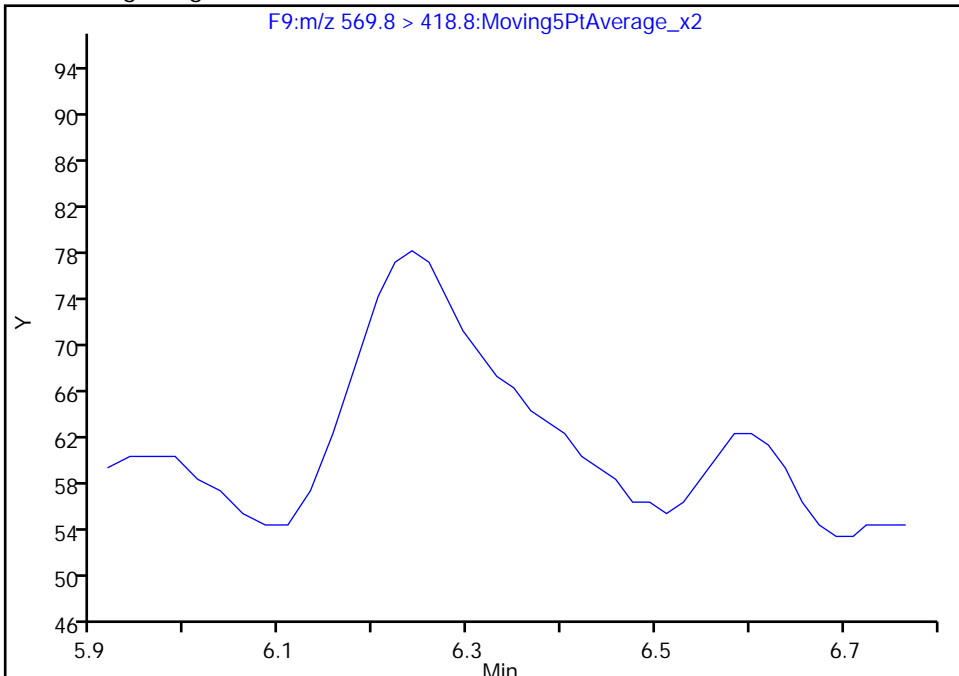
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

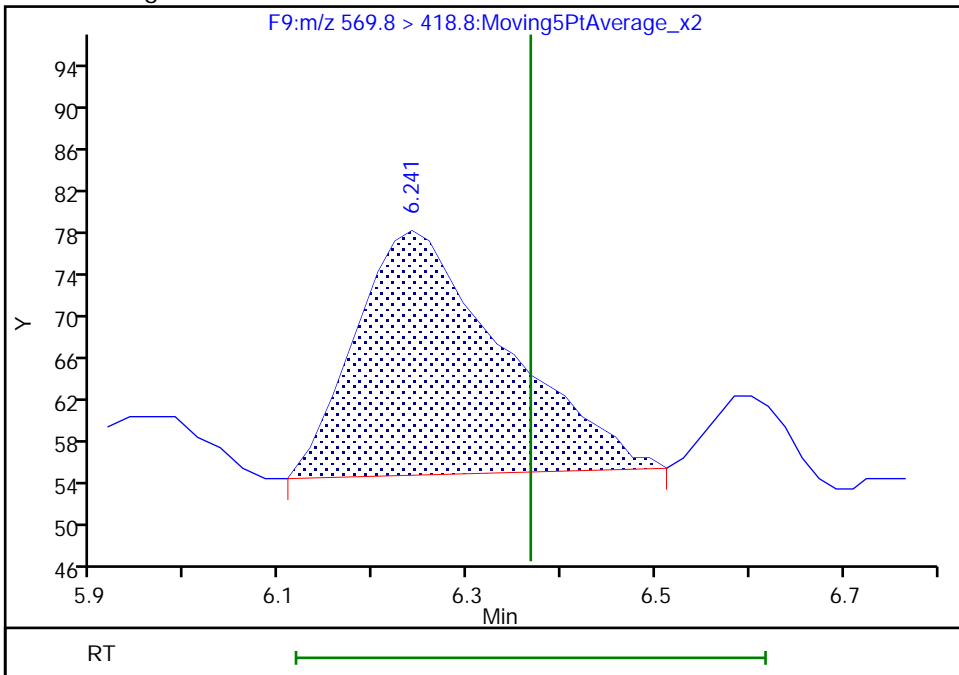
Not Detected
Expected RT: 6.37

Processing Integration Results



Manual Integration Results

RT: 6.24
Area: 258
Amount: 0.079078
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:47:09
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

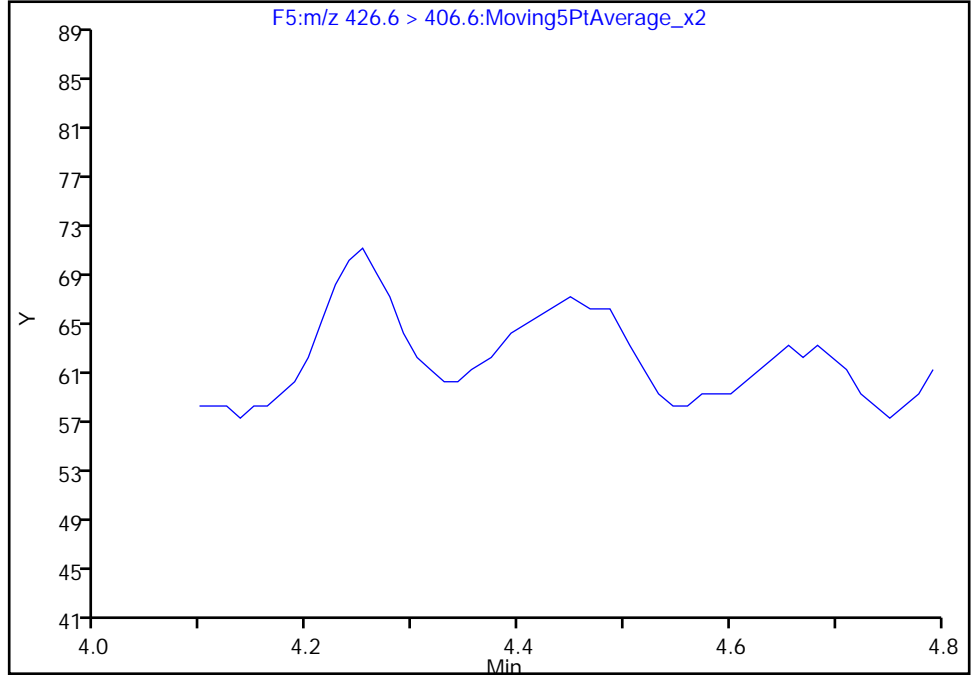
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Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

14 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

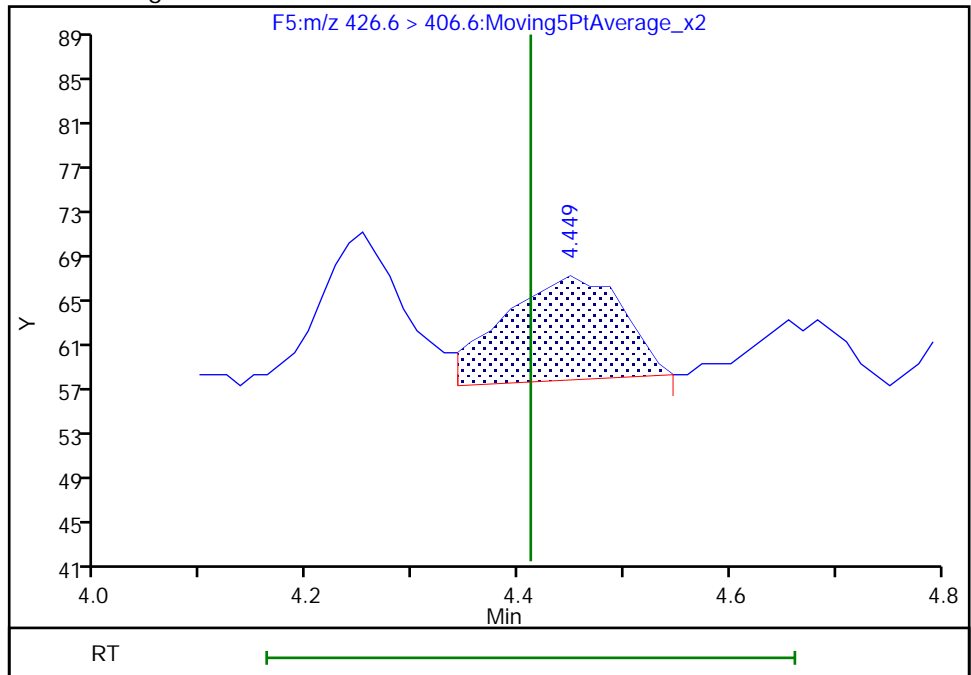
Not Detected
Expected RT: 4.41

Processing Integration Results



Manual Integration Results

RT: 4.45
Area: 74
Amount: 0.038225
Amount Units: ng/ml



TestAmerica Burlington

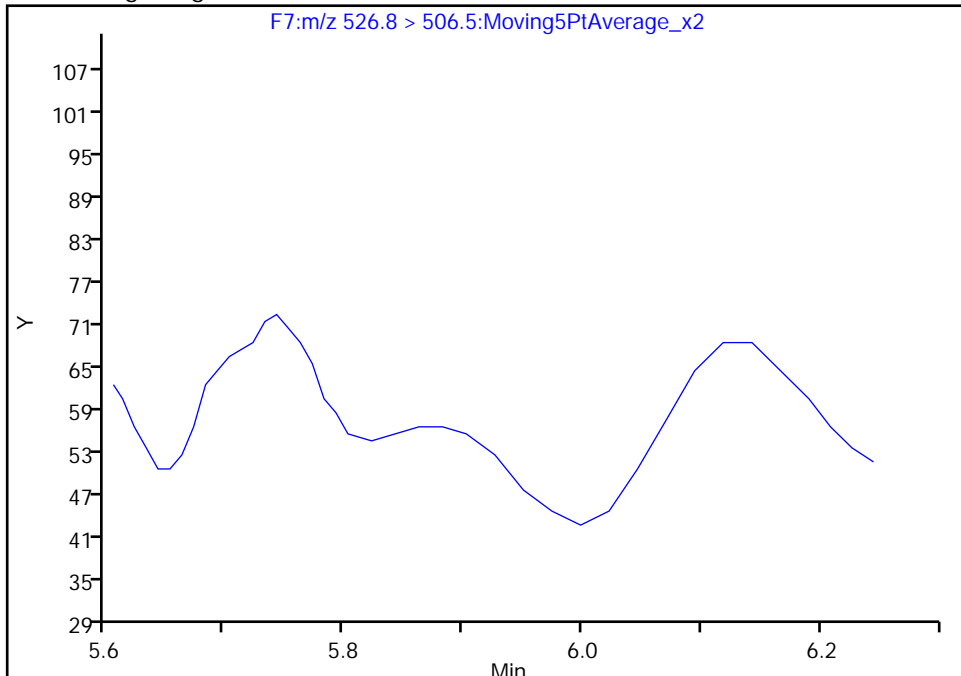
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Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

23 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

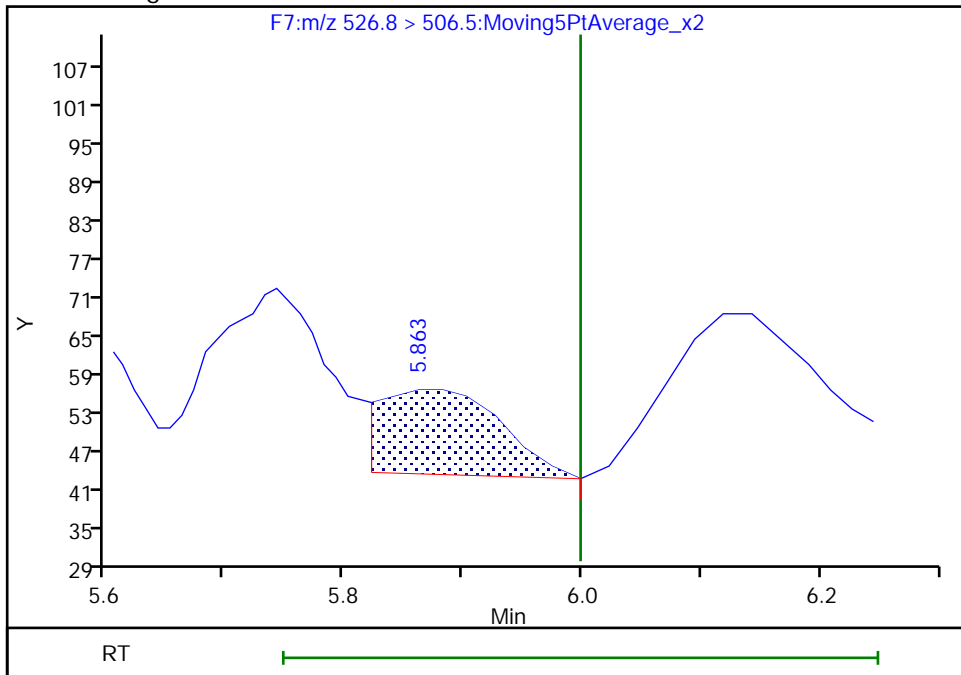
Not Detected
Expected RT: 6.00

Processing Integration Results



RT: 5.86
Area: 92
Amount: 0.030316
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:47:19
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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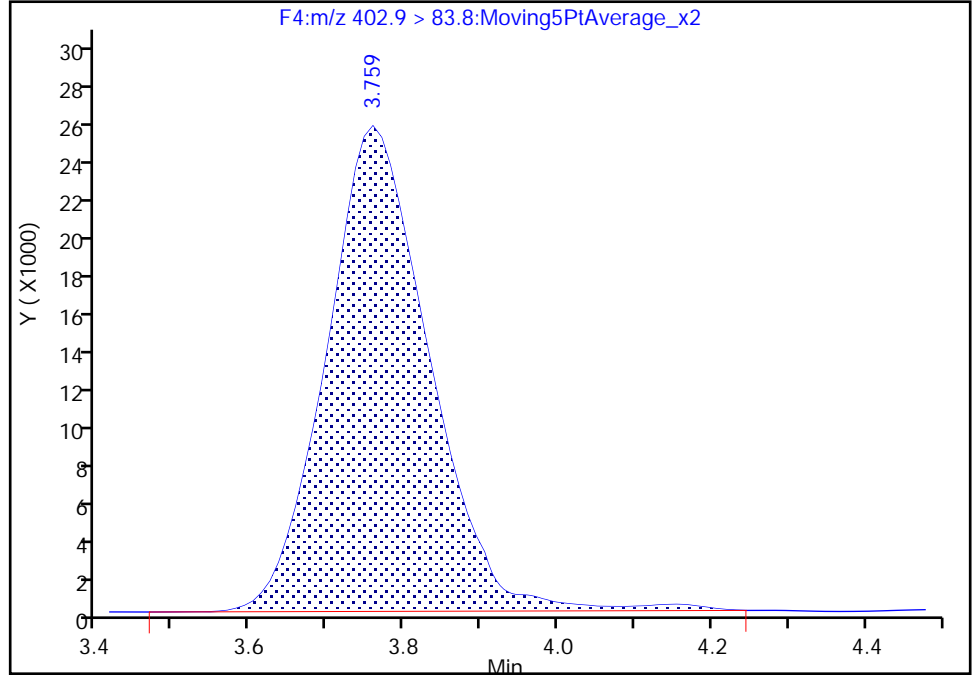
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 11 18O2 PFHxS, CAS: STL00994
Signal: 1

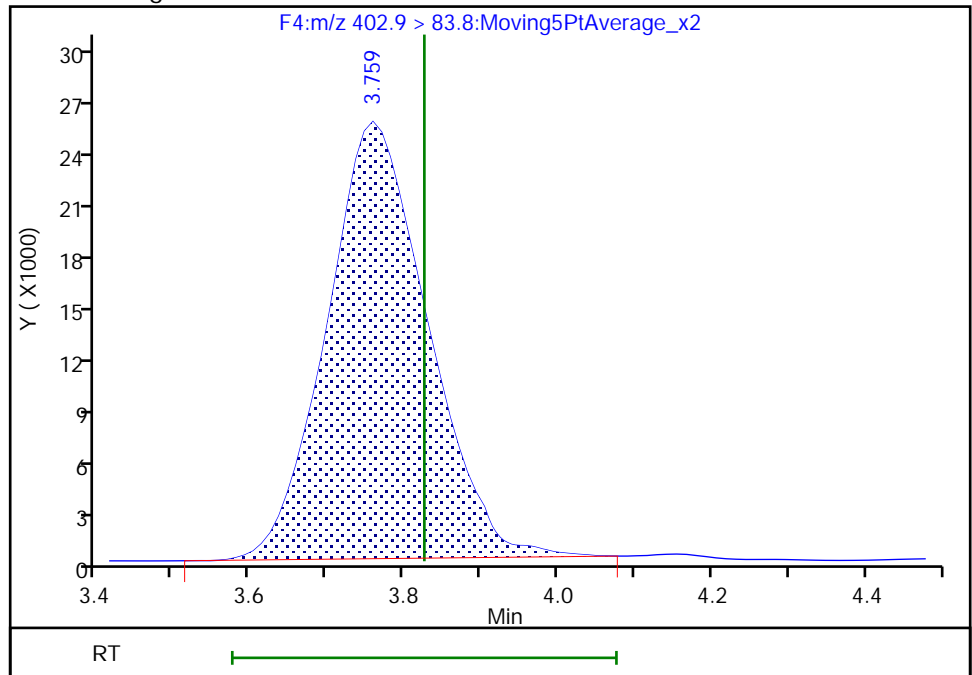
RT: 3.76
Area: 236352
Amount: 46.007298
Amount Units: ng/ml

Processing Integration Results



RT: 3.76
Area: 230618
Amount: 45.086594
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:46:01
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

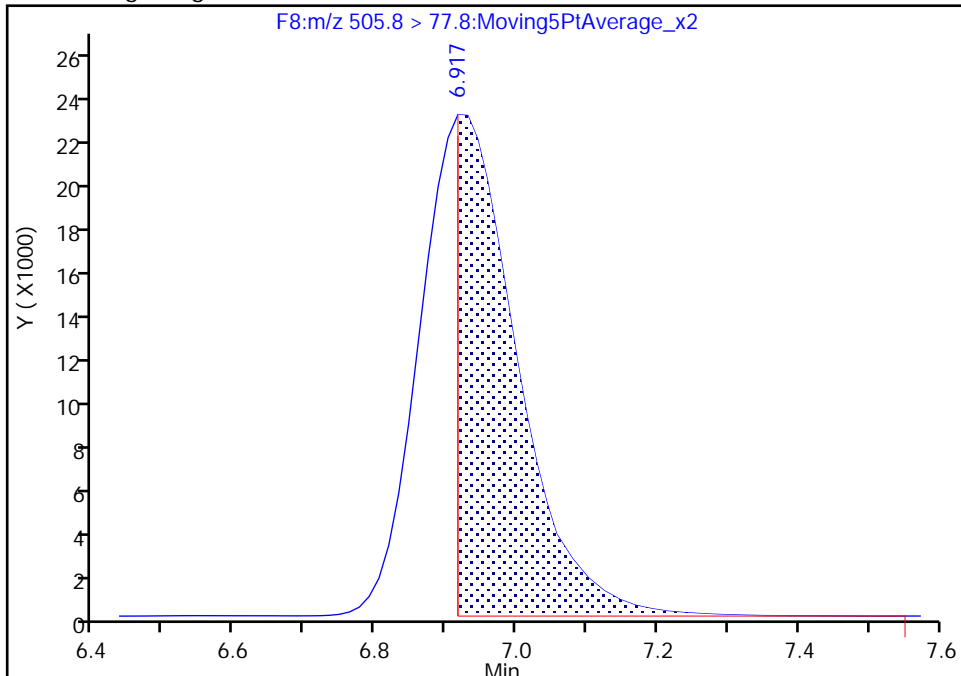
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Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

D 35 13C8 FOSA, CAS: STL01056

Signal: 1

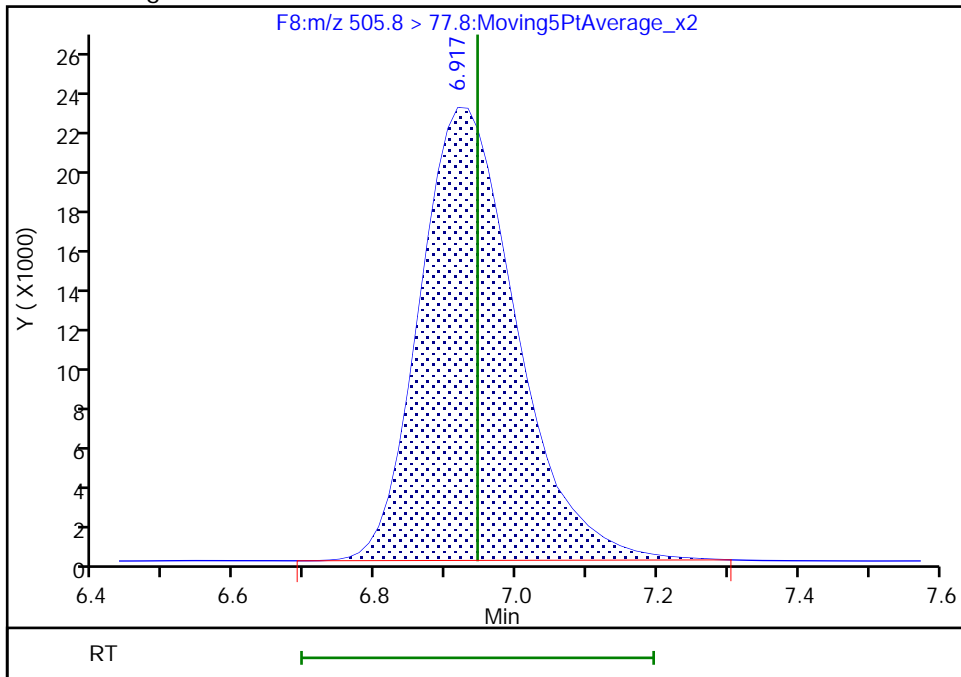
RT: 6.92
Area: 132021
Amount: 15.134839
Amount Units: ng/ml

Processing Integration Results



RT: 6.92
Area: 216340
Amount: 24.801138
Amount Units: ng/ml

Manual Integration Results



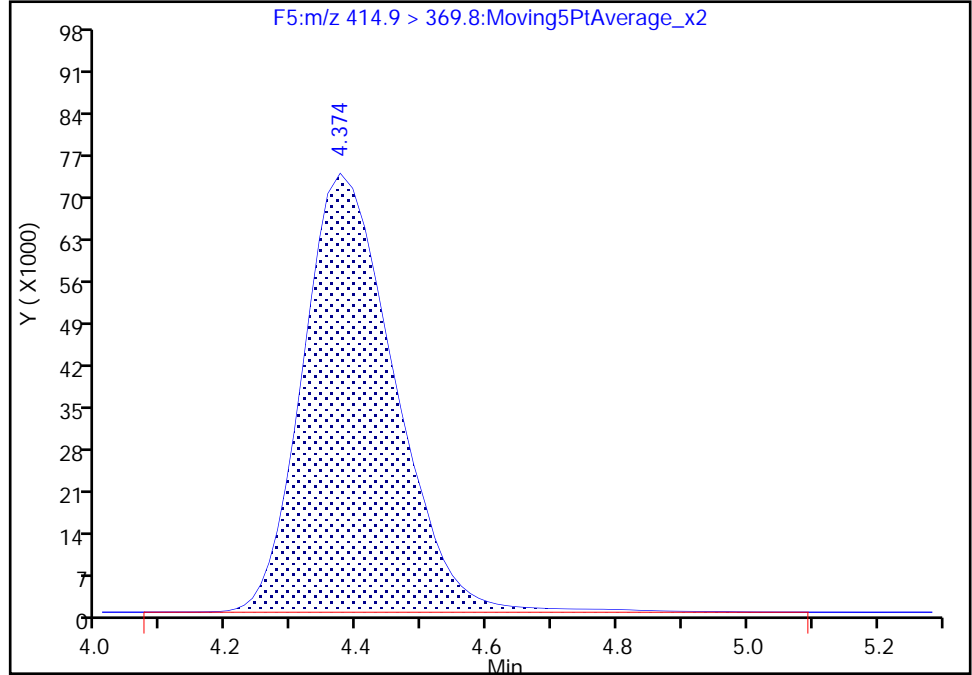
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A68.d
Injection Date: 08-Jan-2019 10:57:47 Instrument ID: LC410
Lims ID: 480-147040-A-2-A Lab Sample ID: 200-147040-2
Client ID: EB-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 68
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

* 15 13C2 PFOA, CAS: STL00623
Signal: 1

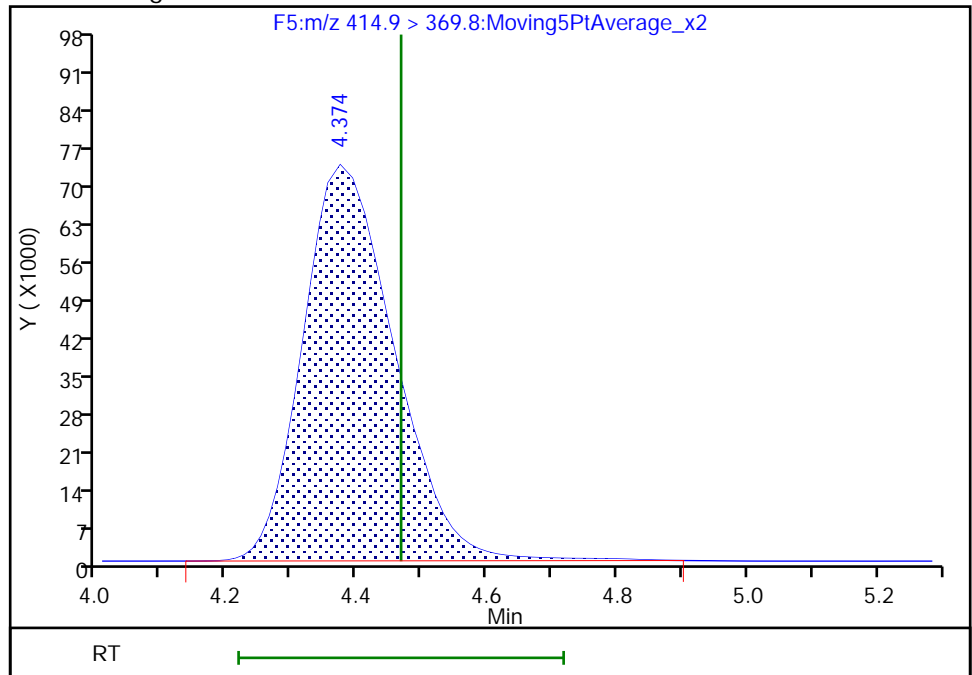
RT: 4.37
Area: 722482
Amount: 50.000000
Amount Units: ng/ml

Processing Integration Results



RT: 4.37
Area: 719350
Amount: 50.000000
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:46:08
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 Lab Sample ID: 480-147040-3
 Matrix: Water Lab File ID: PF010719A70.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 12:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 297.2 (mL) Date Analyzed: 01/08/2019 11:29
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	8.4		1.7	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	12		1.7	0.63
307-24-4	Perfluorohexanoic acid (PFHxA)	9.7		1.7	0.20
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.9		1.7	0.27
335-67-1	Perfluorooctanoic acid (PFOA)	5.8	B	1.7	0.27
375-95-1	Perfluorononanoic acid (PFNA)	0.57	J	1.7	0.32
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.32
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.21
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.29
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.20
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.38
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	J	1.7	0.37
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.28	J	1.7	0.22
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.3		1.7	0.64
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.45
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.47
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.38
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.59
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	4.3	J	17	0.84
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.47

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 Lab Sample ID: 480-147040-3
 Matrix: Water Lab File ID: PF010719A70.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 12:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 297.2 (mL) Date Analyzed: 01/08/2019 11:29
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	88		50-150
STL01892	13C4 PFHpA	62		50-150
STL00990	13C4 PFOA	85		50-150
STL00991	13C4 PFOS	103		50-150
STL00995	13C5 PFNA	86		50-150
STL00992	13C4 PFBA	57		25-150
STL00993	13C2 PFHxA	45	*	50-150
STL00996	13C2 PFDA	93		50-150
STL00997	13C2 PFUnA	94		50-150
STL00998	13C2 PFDoA	84		50-150
STL01056	13C8 FOSA	64		25-150
STL01893	13C5 PFPeA	52		25-150
STL02116	13C2 PFTeDA	76		50-150
STL02118	d3-NMeFOSAA	62		50-150
STL02117	d5-NEtFOSAA	78		50-150
STL02279	M2-6:2 FTS	184	*	25-150
STL02280	M2-8:2 FTS	120		25-150
STL02337	13C3 PFBS	77		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
 Lims ID: 480-147040-A-3-A
 Client ID: MW-09-121918
 Sample Type: Client
 Inject. Date: 08-Jan-2019 11:29:37 ALS Bottle#: 0 Worklist Smp#: 70
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-070 040-3
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:35:28 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303

First Level Reviewer: chirgwinb Date: 08-Jan-2019 17:41:39
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.338	2.402	-0.064	1.000	186253	28.7	57.3	91.4	M
2 Perfluorobutanoic acid	212.9 > 168.9	2.338	2.402	-0.064	1.000	16325	4.98		0.4	M
D 3 13C5 PFPeA	267.7 > 222.6	2.770	2.818	-0.048	1.000	107965	26.2	52.4	61.0	
4 Perfluoropentanoic acid	262.9 > 218.8	2.760	2.818	-0.058	0.996	44052	7.16		5.8	M
D 6 13C3 PFBS	302.0 > 79.8	2.834	2.900	-0.066	1.000	121228	35.7	76.7	255	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.834	2.900	-0.066	1.000	4326	0.9509		1.0	
D 7 13C2 PFHxA	314.8 > 269.6	3.152	3.250	-0.098	1.000	166348	22.4	44.8	633	M
8 Perfluorohexanoic acid	312.8 > 268.6	3.164	3.250	-0.086	1.004	19860	5.75		13.4	M
D 9 13C4 PFHpA	366.9 > 321.8	3.659	3.782	-0.123	1.000	423034	31.1	62.3	721	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.681	3.782	-0.101	1.006	14197	1.72		8.8	M
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.726	3.815	-0.089	1.006	2115	0.1642		4.0	M
D 11 18O2 PFHxS	402.9 > 83.8	3.703	3.826	-0.123	1.000	163811	41.7	88.1	371	
D 13 M2-6:2 FTS	428.6 > 408.6	4.265	4.411	-0.146	1.000	105816	87.3	184	487	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.265	4.411	-0.146	1.000	5544	2.54		85.9	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.317	4.449	-0.132	1.000	30198	3.46			36.4	M
D 17 13C4 PFOA										
416.9 > 371.8	4.317	4.468	-0.151	1.000	440215	42.4		84.8	1095	
* 15 13C2 PFOA										
414.9 > 369.8	4.304	4.468	-0.164		552913	50.0			1664	
D 20 13C5 PFNA										
467.8 > 422.8	5.072	5.222	-0.150	1.000	602505	43.1		86.1	1295	
19 Perfluorononanoic acid										M
462.8 > 418.8	5.072	5.222	-0.150	1.000	4465	0.3371			6.0	M
D 22 13C4 PFOS										
502.8 > 79.8	5.085	5.236	-0.151	1.000	170772	49.1		103	486	
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	4.826	5.250	-0.424	0.949	5110	1.38			15.1	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.823	5.998	-0.175	1.000	189604	57.7		120	499	
25 Perfluorodecanoic acid										M
512.9 > 468.5	5.843	6.022	-0.179	1.000	1044	0.0773			3.8	M
D 26 13C2 PFDA										
514.9 > 469.5	5.843	6.022	-0.179	1.000	668987	46.4		92.7	2302	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.205	6.367	-0.162	1.000	114917	31.2		62.4	421	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.562	6.734	-0.172	1.000	121622	38.9		77.8	774	
D 32 13C2 PFUnA										
564.8 > 519.8	6.598	6.777	-0.179	1.000	708657	47.2		94.4	3214	
33 Perfluoroundecanoic acid										M
562.8 > 518.6	6.616	6.777	-0.161	1.003	1103	0.0759			6.9	M
D 35 13C8 FOSA										
505.8 > 77.8	6.931	6.945	-0.014	1.000	212949	31.8		63.5	1202	
34 Perfluorooctanesulfonamide										M
497.8 > 77.8	6.917	6.959	-0.042	0.998	179	0.0497			1.9	M
D 37 13C2 PFDaA										
614.8 > 569.6	7.294	7.474	-0.180	1.000	802093	42.2		84.4	2723	
36 Perfluorododecanoic acid										M
612.8 > 568.6	7.272	7.474	-0.202	0.997	872	0.0633			14.4	M
38 Perfluorotridecanoic acid										M
662.8 > 618.6	7.920	8.097	-0.177	0.934	222	0.0172			2.6	M
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.453	8.666	-0.213	0.996	550	0.0428	Target=1.00		2.5	M
712.8 > 168.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
712.8 > 218.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
D 40 13C2 PFTeDA										
714.8 > 669.6	8.484	8.681	-0.197	1.000	658528	37.8		75.5	1005	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d

Injection Date: 08-Jan-2019 11:29:37

Instrument ID: LC410

Lims ID: 480-147040-A-3-A

Lab Sample ID: 200-147040-3

Client ID: MW-09-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 70

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

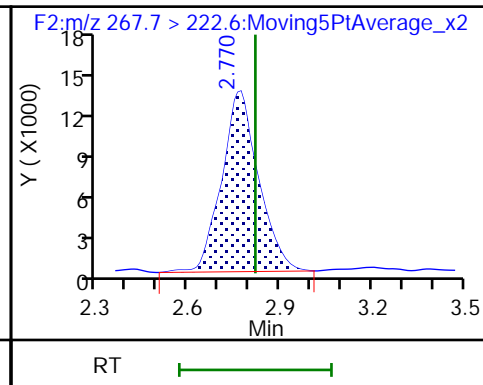
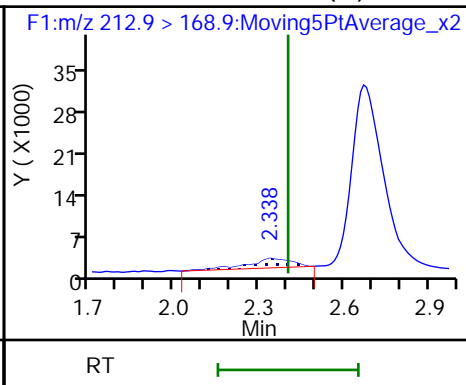
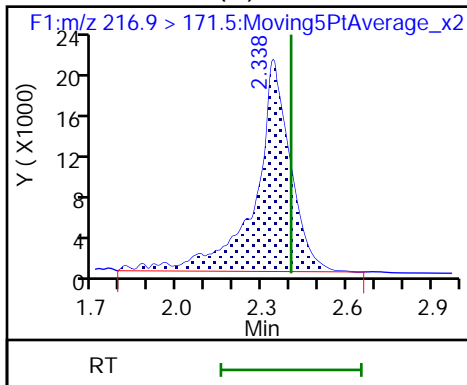
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

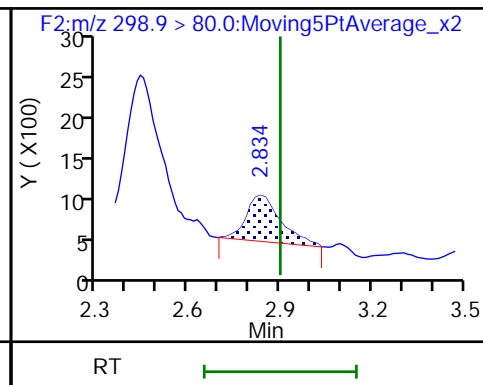
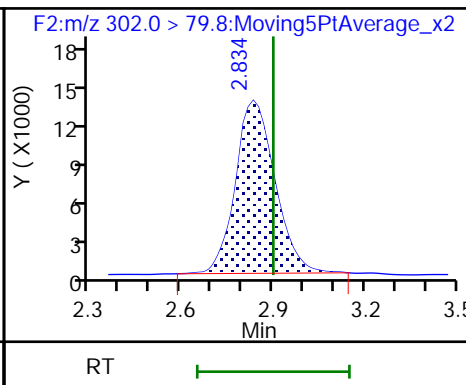
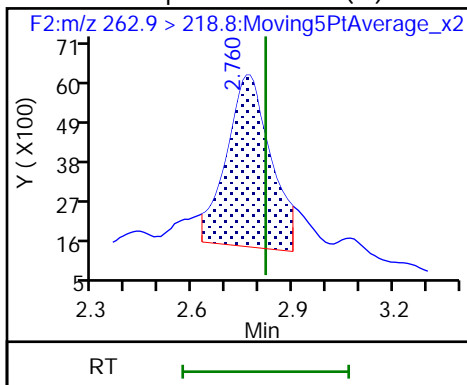
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

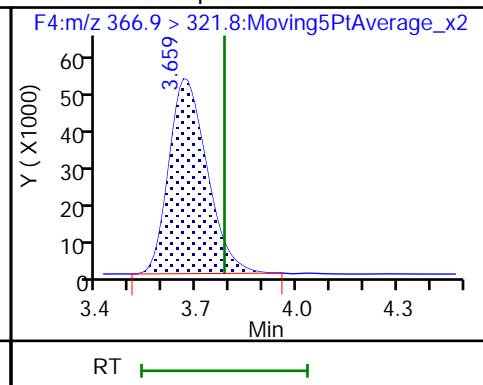
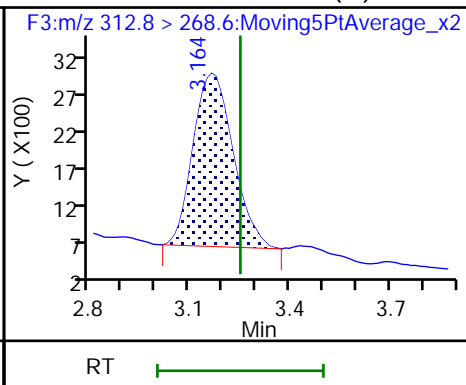
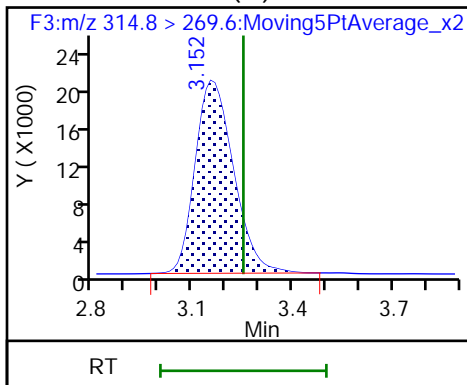
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA (M)

8 Perfluorohexanoic acid (M)

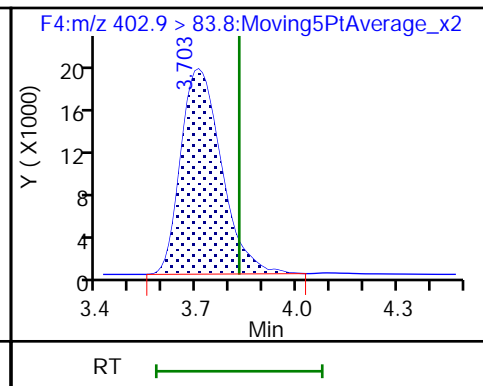
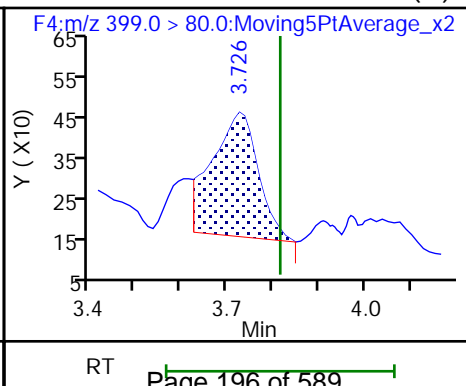
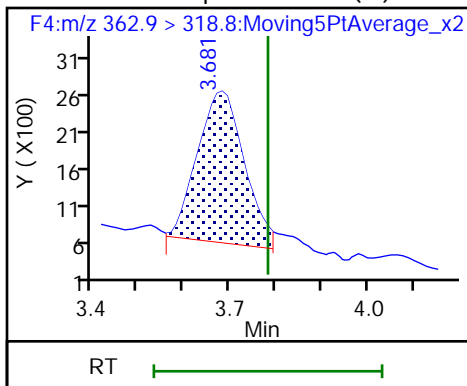
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

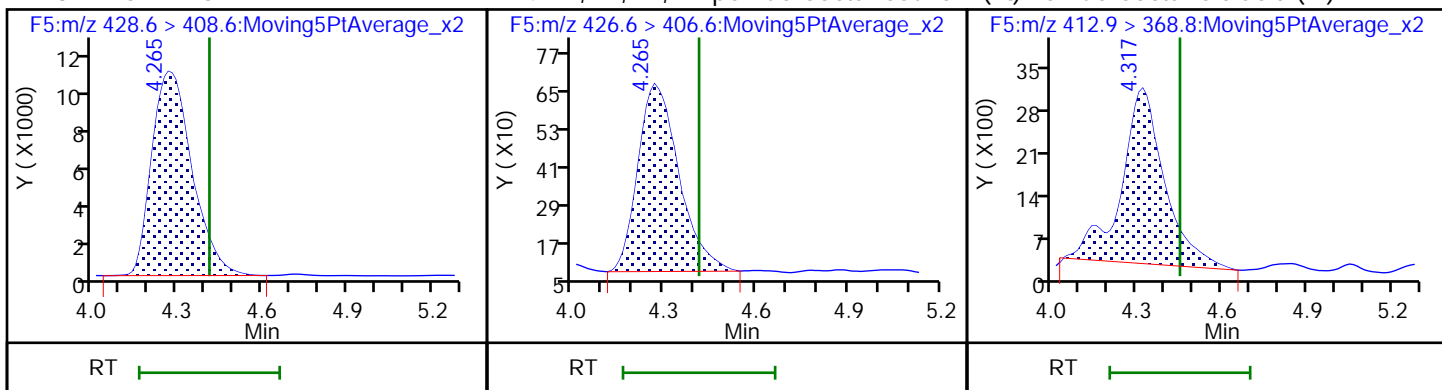
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

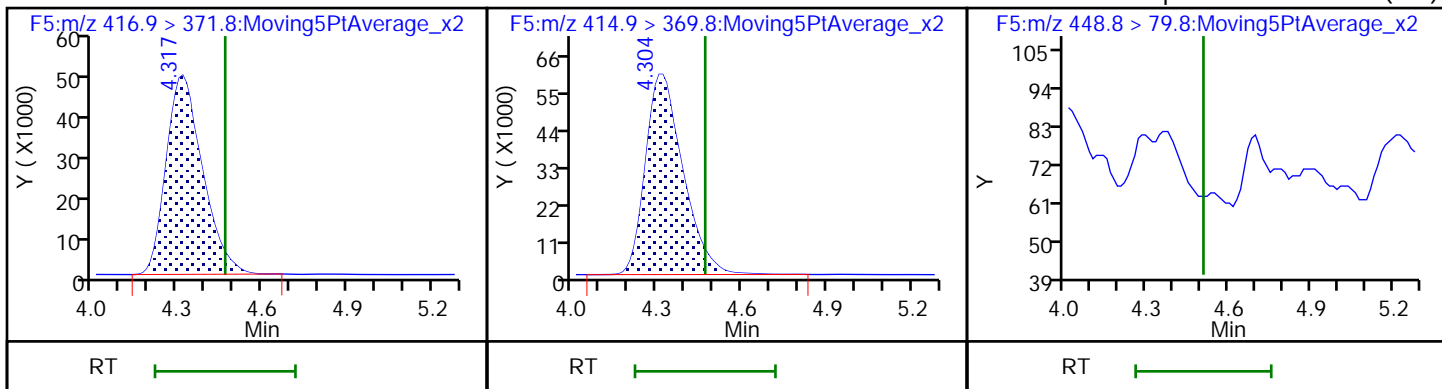
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA

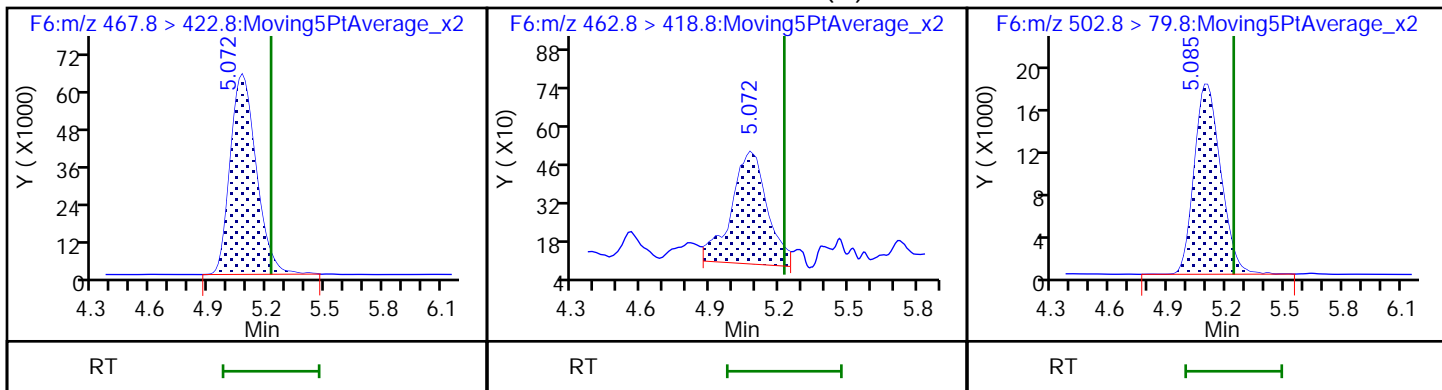
18 Perfluoroheptanesulfonic acid (ND)



D 20 13C5 PFNA

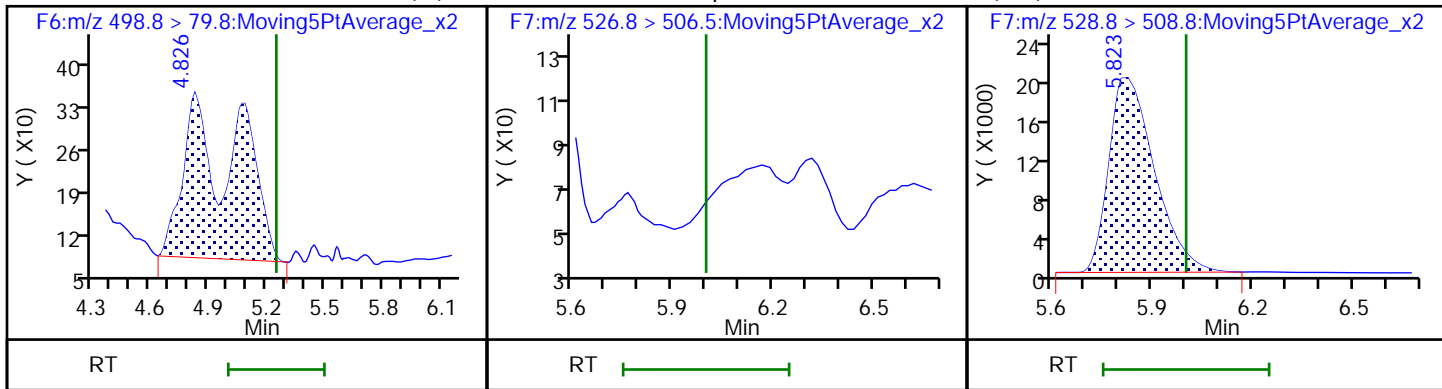
19 Perfluorononanoic acid (M)

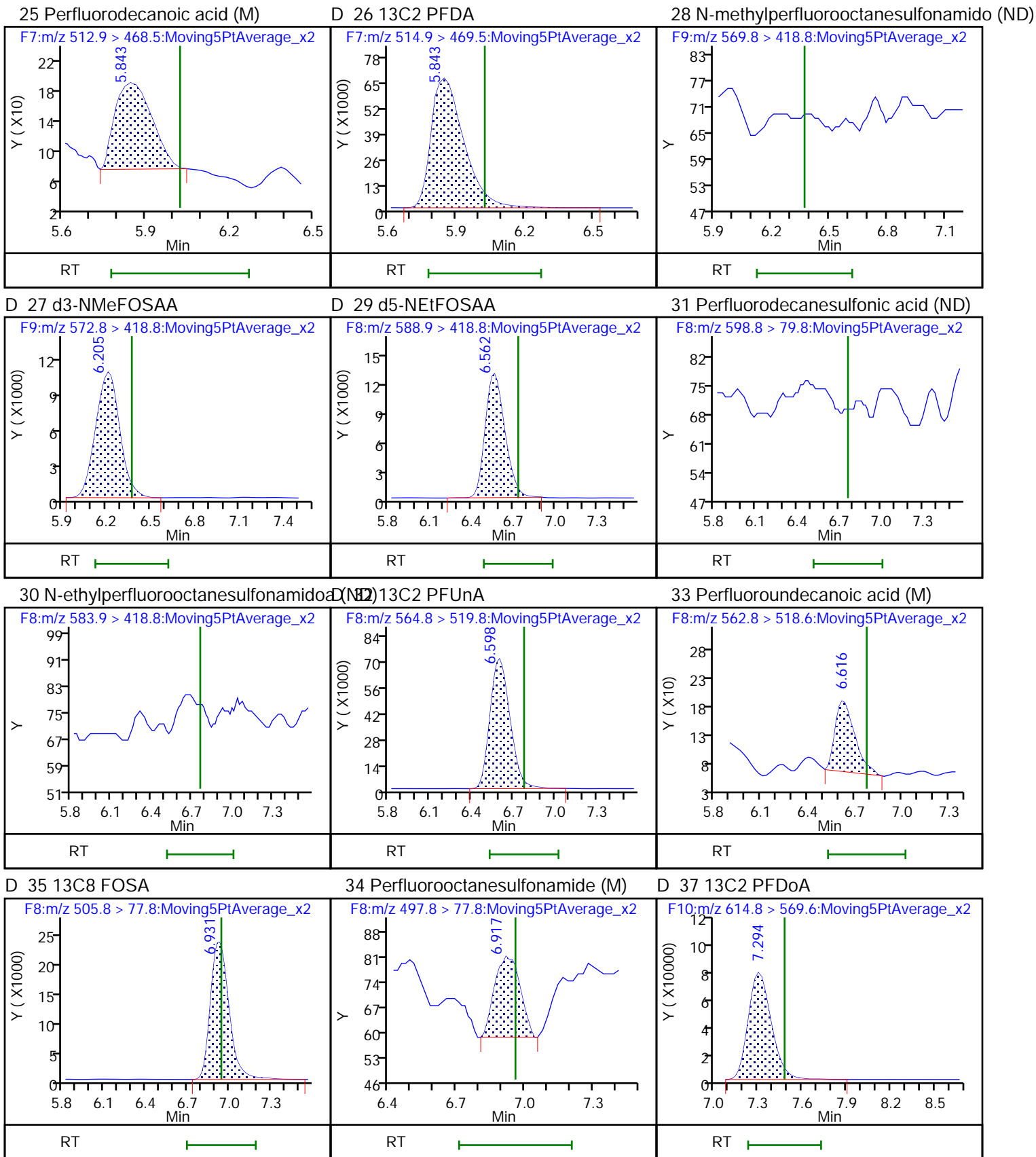
D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfoni (M) M2-8:2 FTS

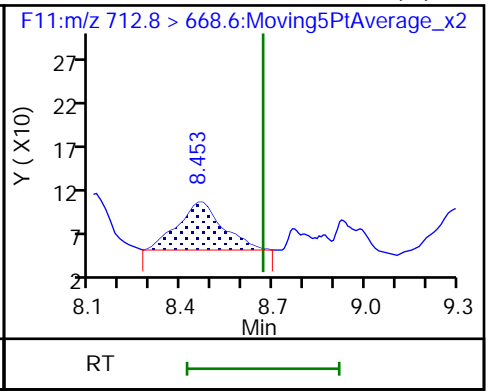
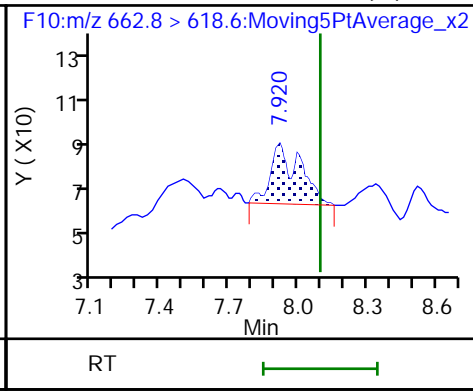
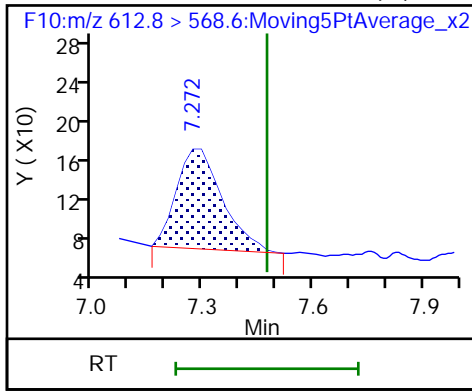




36 Perfluorododecanoic acid (M)

38 Perfluorotridecanoic acid (M)

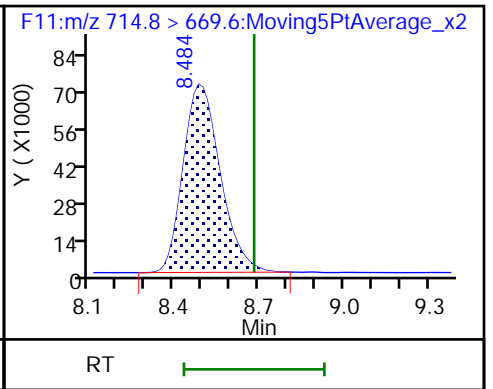
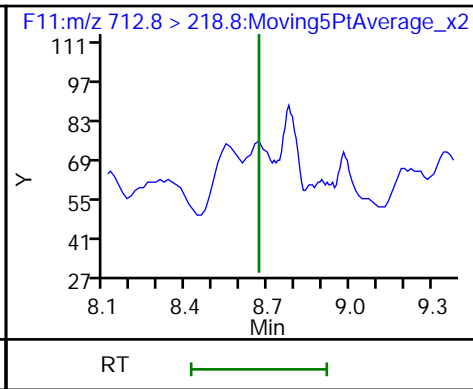
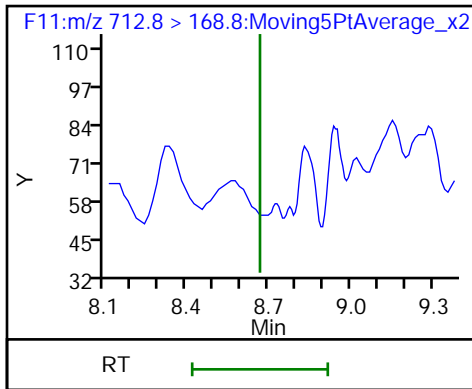
39 Perfluorotetradecanoic acid (M)



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

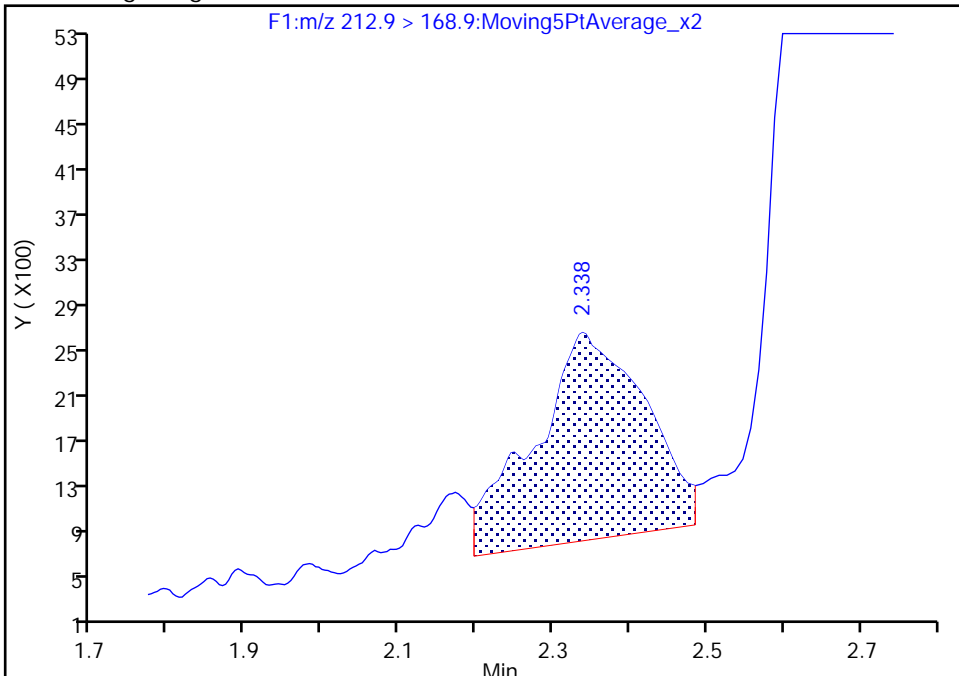
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

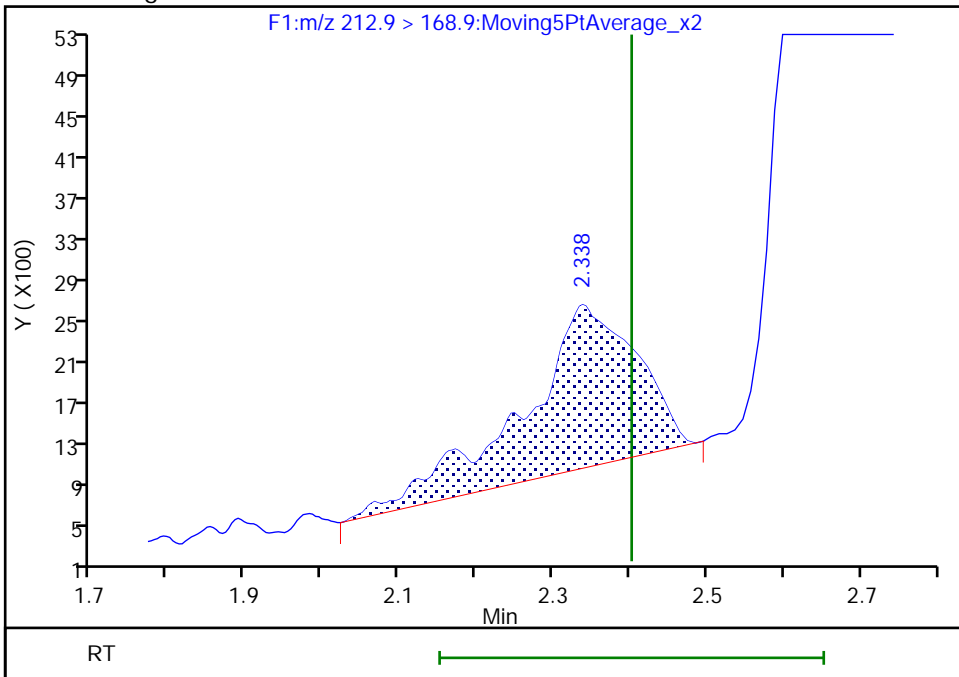
RT: 2.34
Area: 18372
Amount: 5.630654
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 16325
Amount: 4.982072
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:38:40
Audit Action: Manually Integrated

TestAmerica Burlington

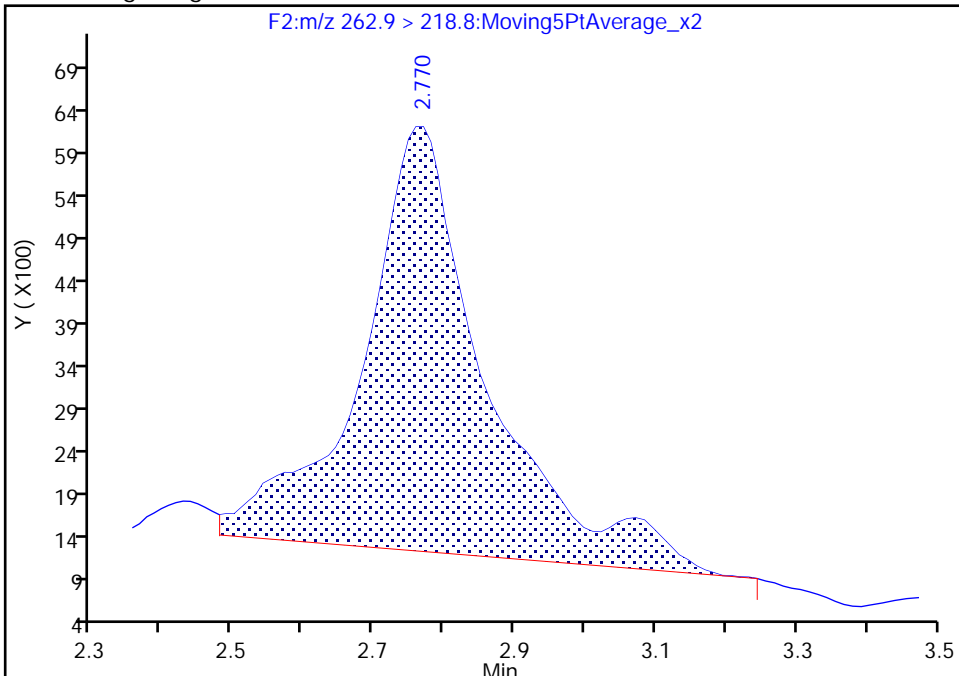
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

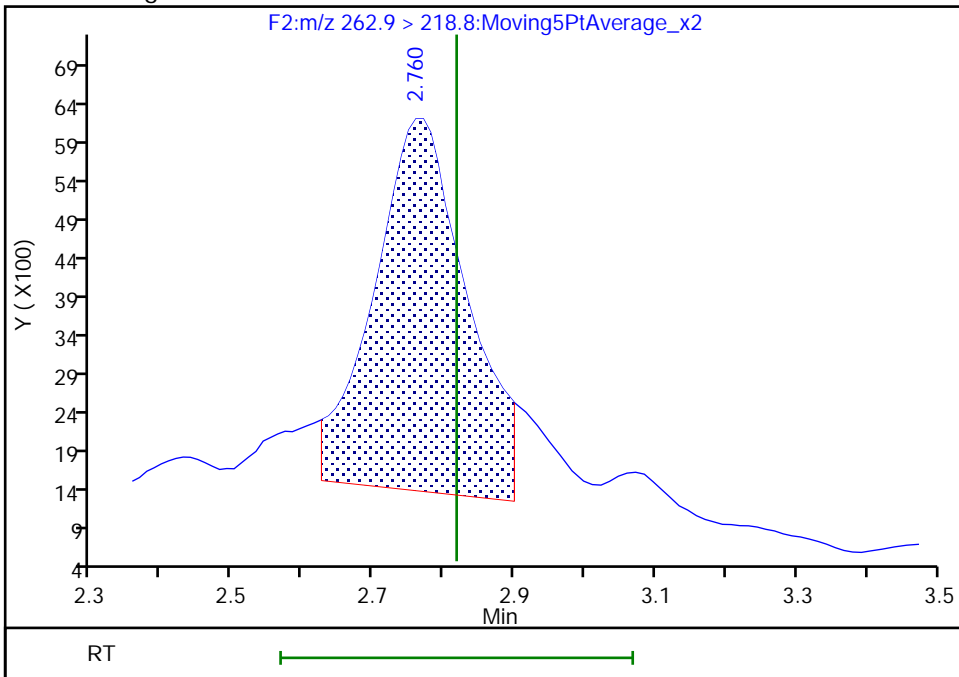
RT: 2.77
Area: 61220
Amount: 9.955242
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 44052
Amount: 7.163481
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:41:33
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

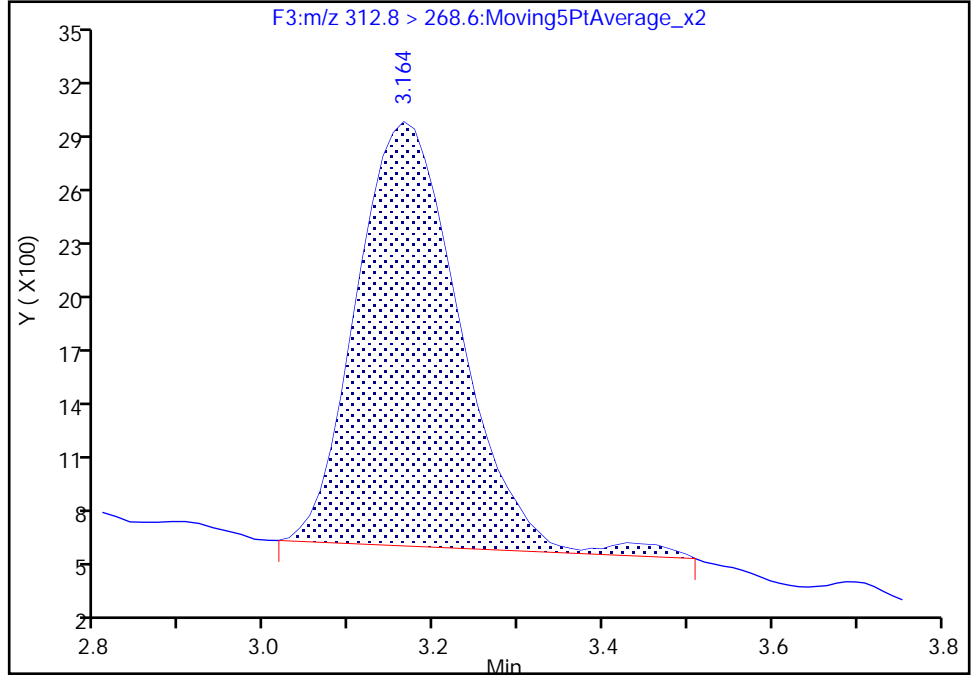
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

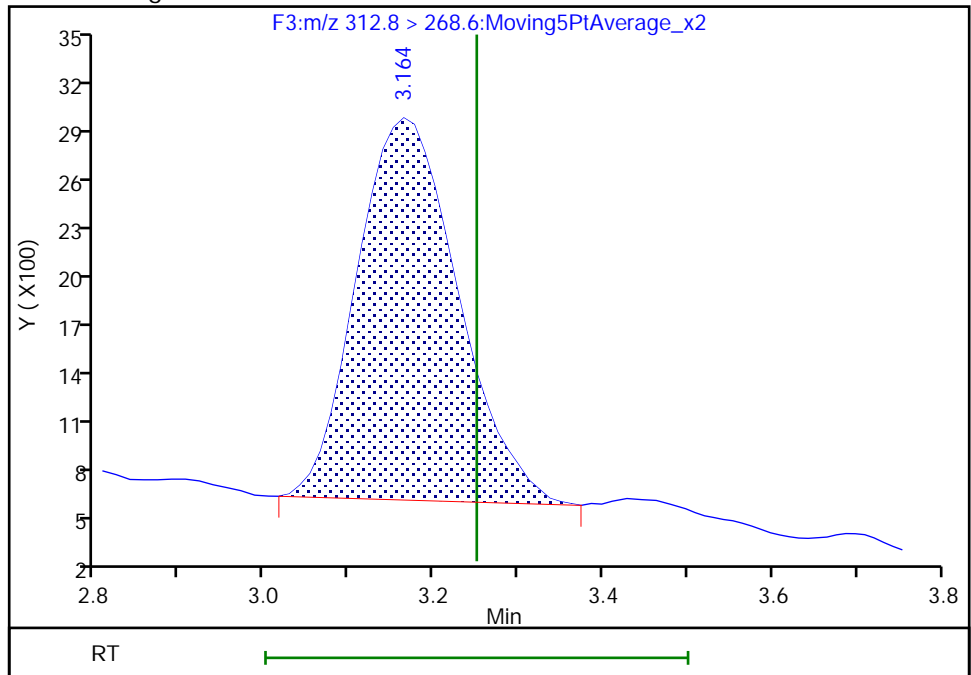
RT: 3.16
Area: 20421
Amount: 5.915895
Amount Units: ng/ml

Processing Integration Results



RT: 3.16
Area: 19860
Amount: 5.753375
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:39:16
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

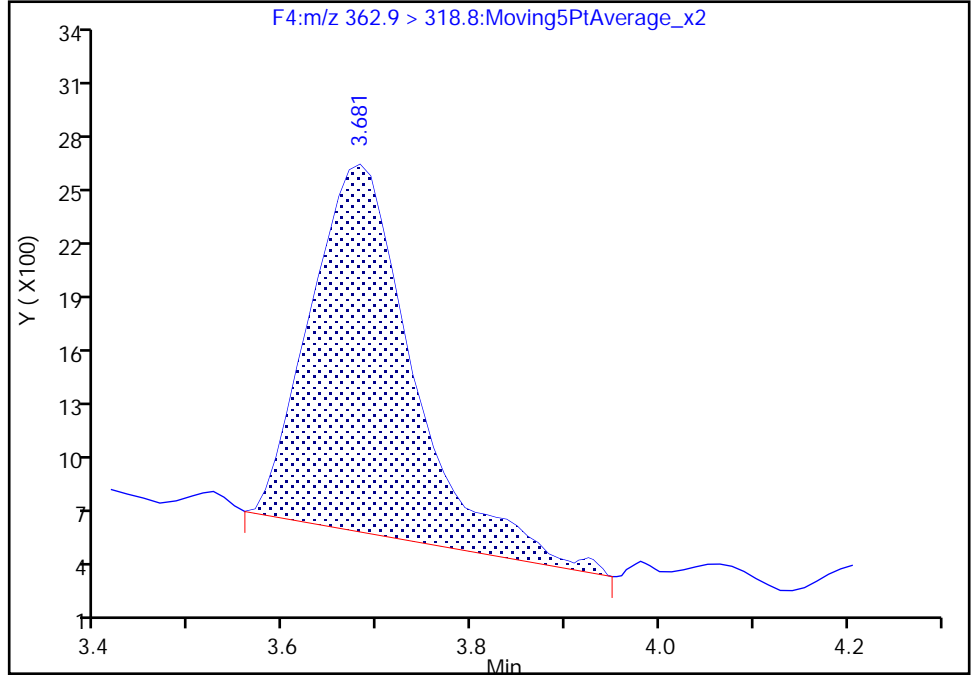
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

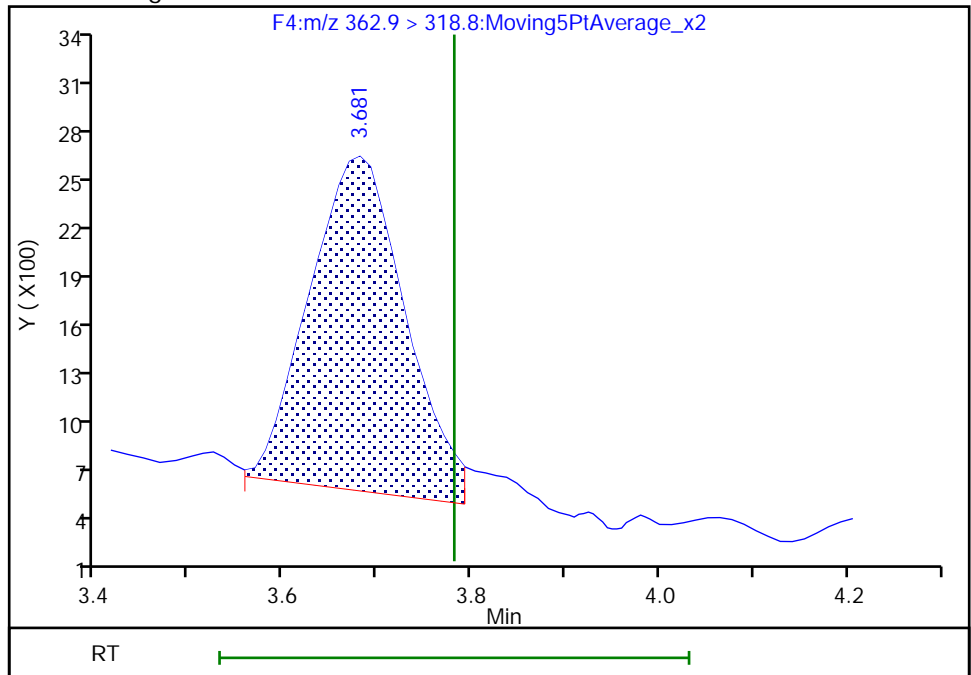
RT: 3.68
Area: 15126
Amount: 1.829035
Amount Units: ng/ml

Processing Integration Results



RT: 3.68
Area: 14197
Amount: 1.716701
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:39:28
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

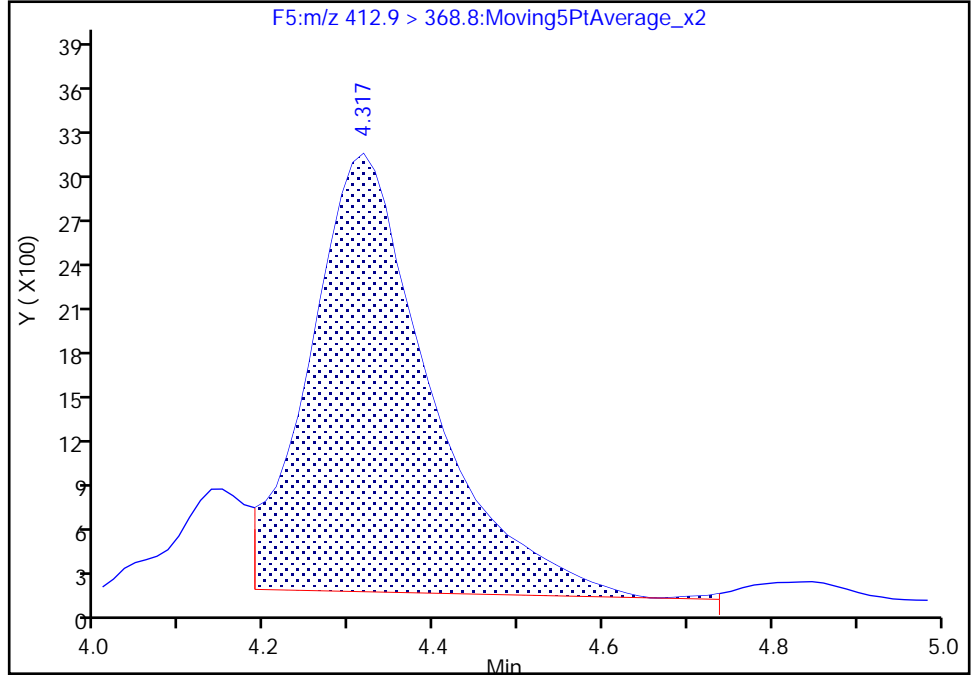
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

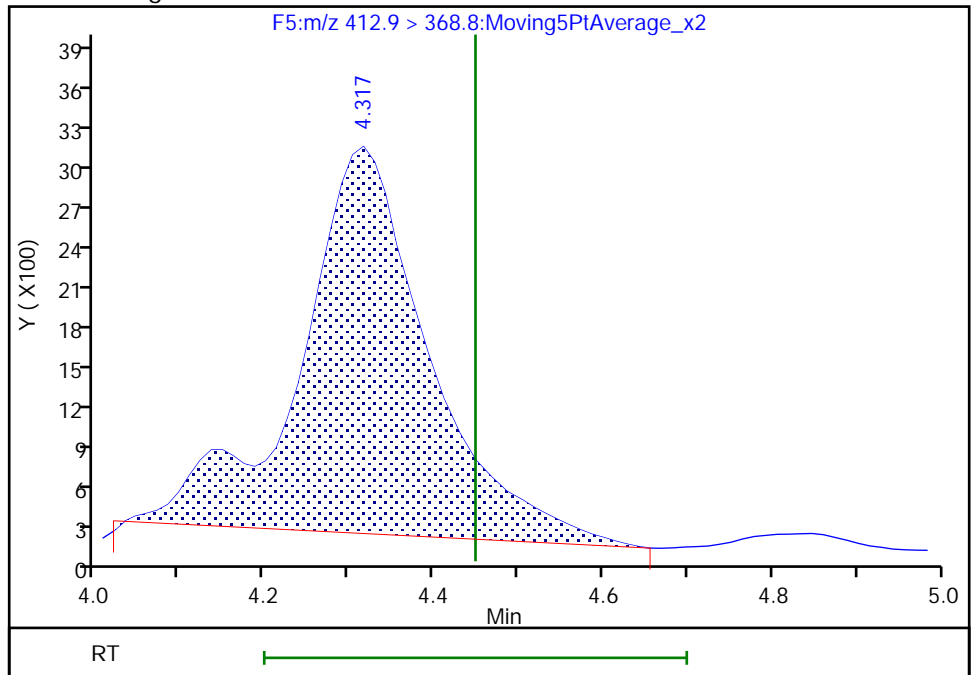
RT: 4.32
Area: 28615
Amount: 3.283231
Amount Units: ng/ml

Processing Integration Results



RT: 4.32
Area: 30198
Amount: 3.464862
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:39:49
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

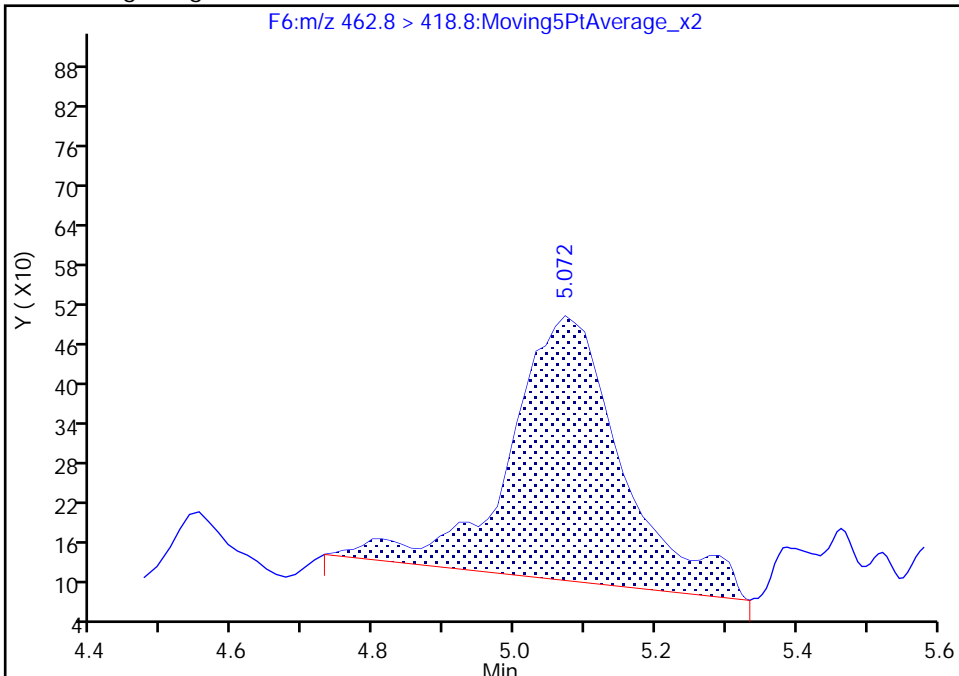
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

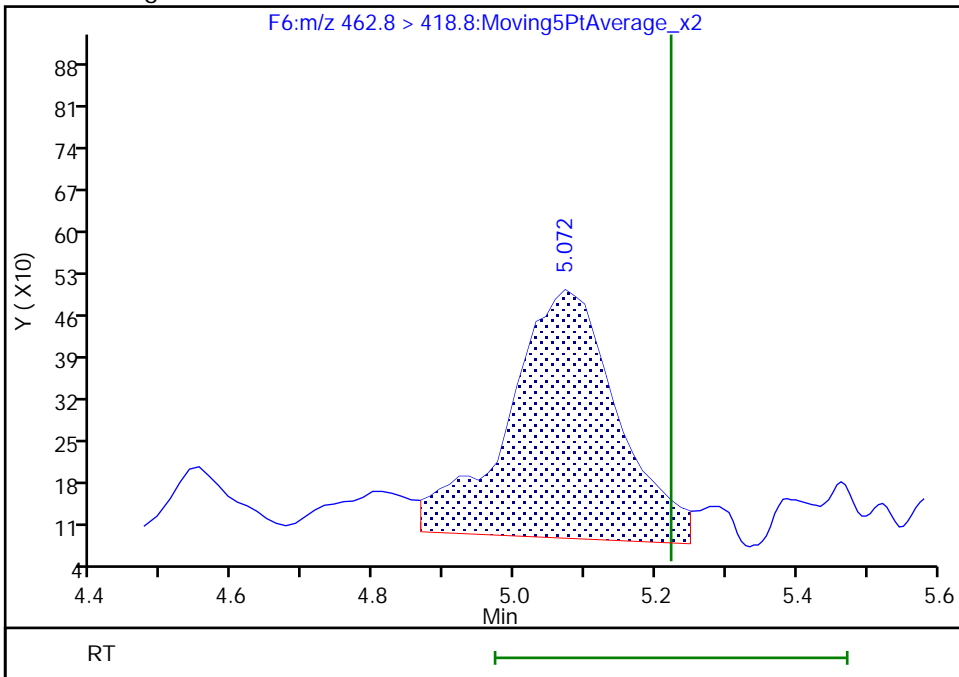
RT: 5.07
Area: 4469
Amount: 0.337375
Amount Units: ng/ml

Processing Integration Results



RT: 5.07
Area: 4465
Amount: 0.337073
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:40:01
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

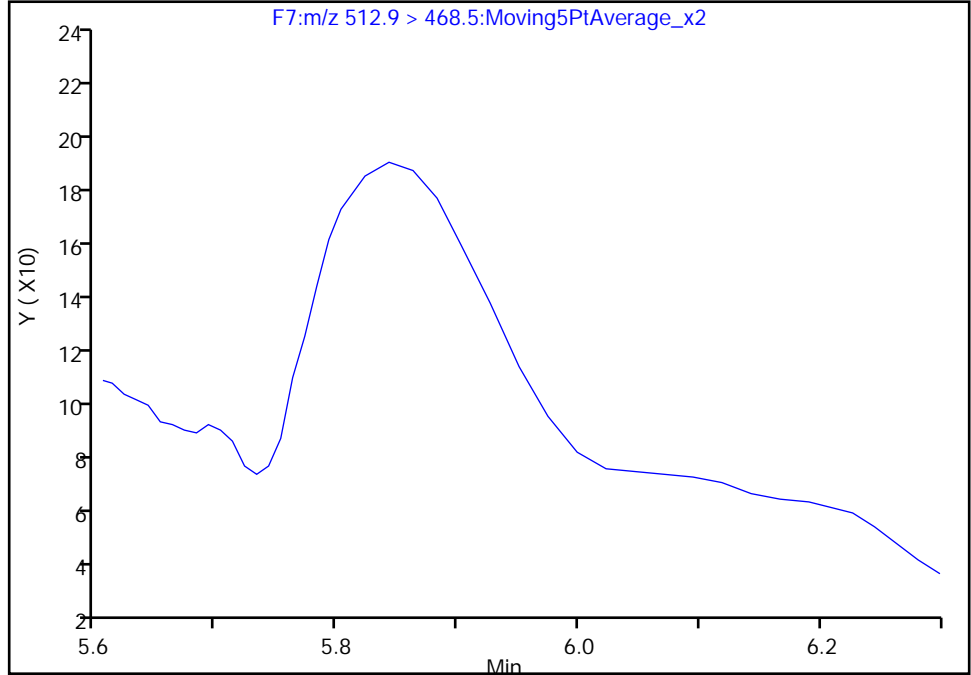
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

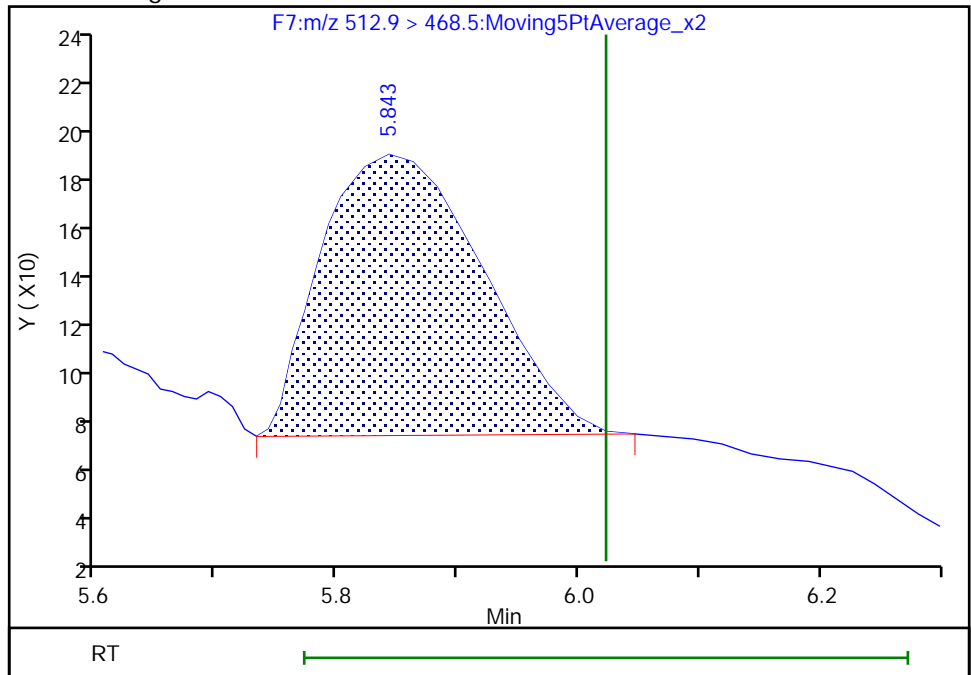
Not Detected
Expected RT: 6.02

Processing Integration Results



Manual Integration Results

RT: 5.84
Area: 1044
Amount: 0.077295
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:40:53

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Burlington

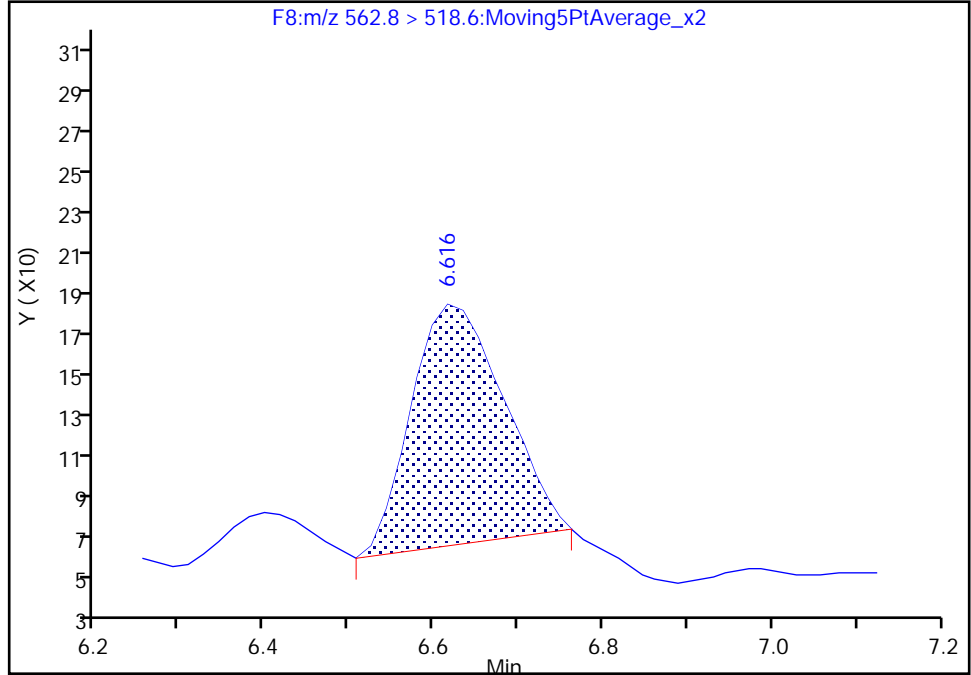
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

33 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

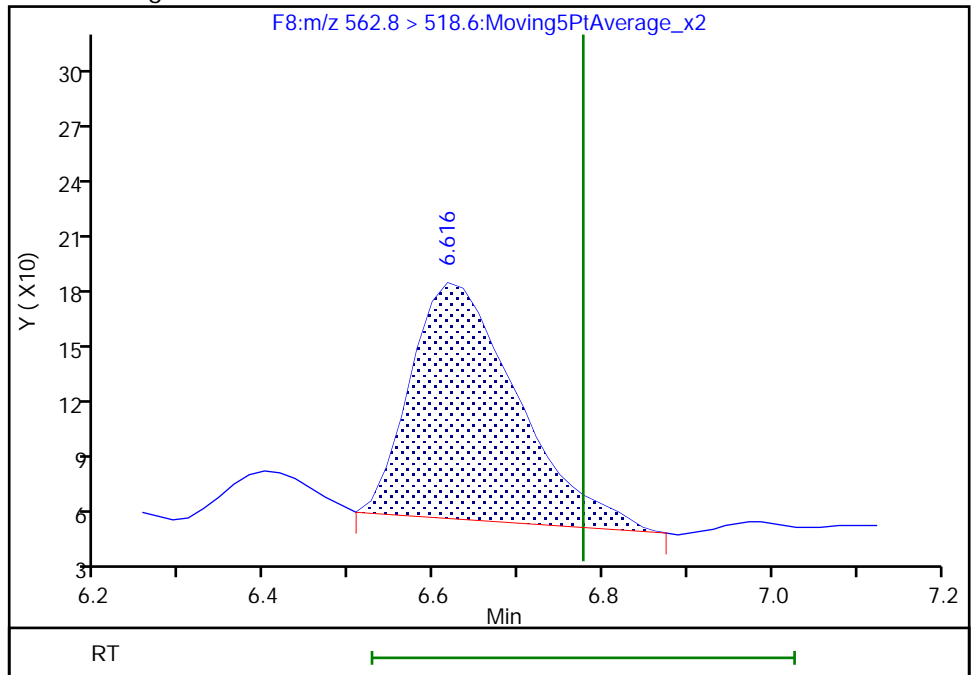
RT: 6.62
Area: 877
Amount: 0.060316
Amount Units: ng/ml

Processing Integration Results



RT: 6.62
Area: 1103
Amount: 0.075859
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:40:18
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

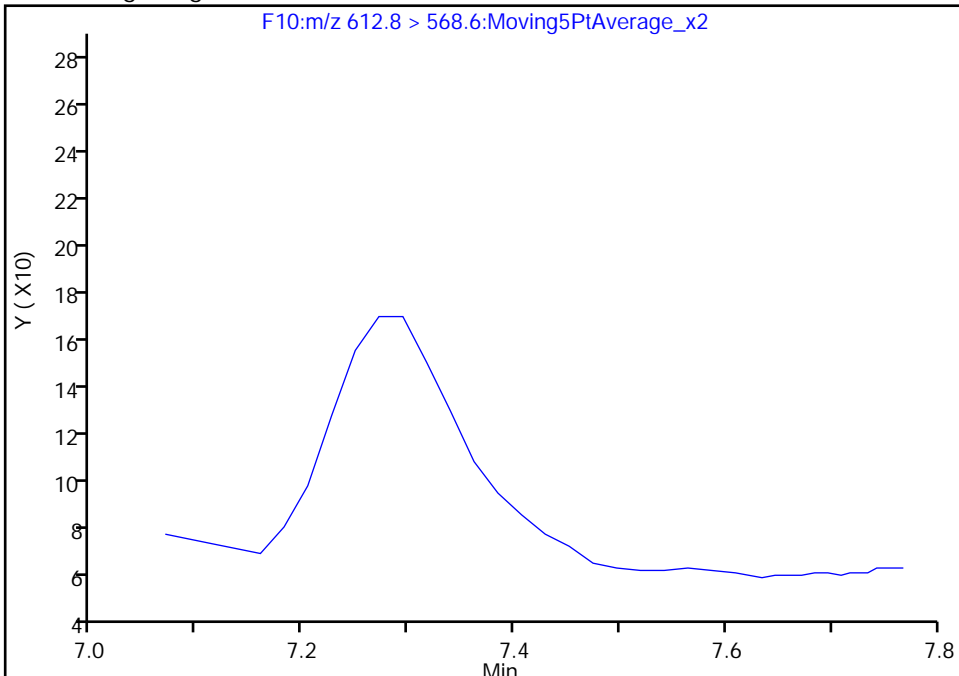
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

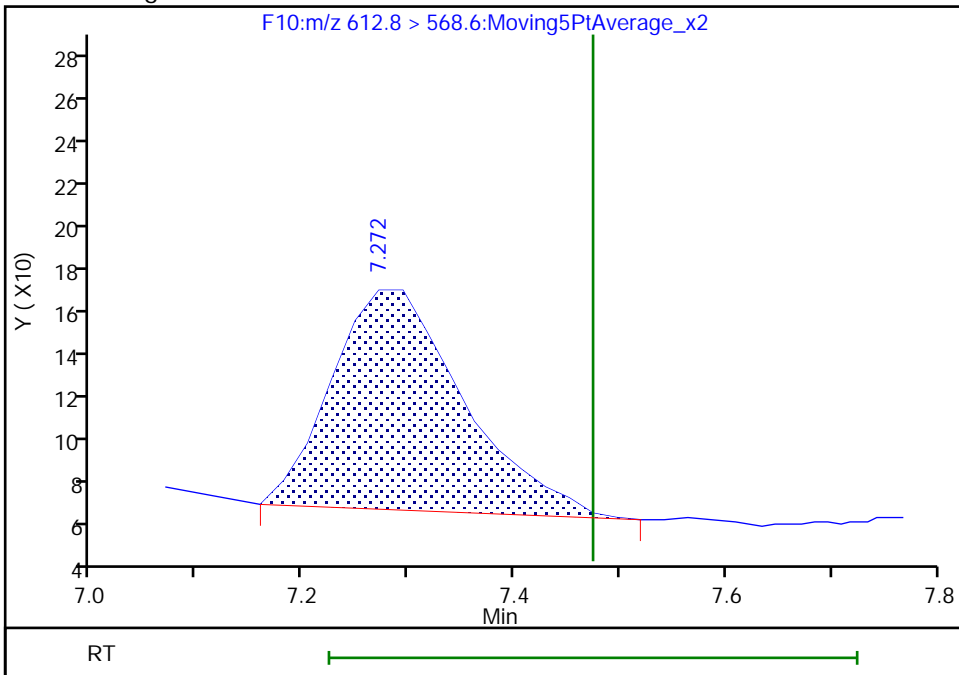
Not Detected
Expected RT: 7.47

Processing Integration Results



RT: 7.27
Area: 872
Amount: 0.063322
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:40:40
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

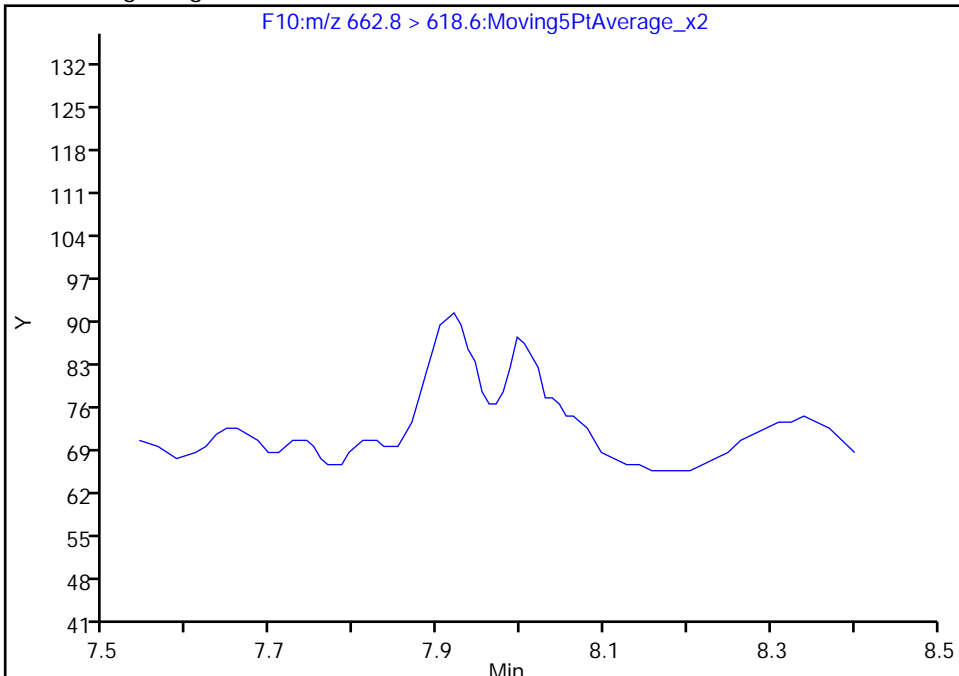
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:M/RM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

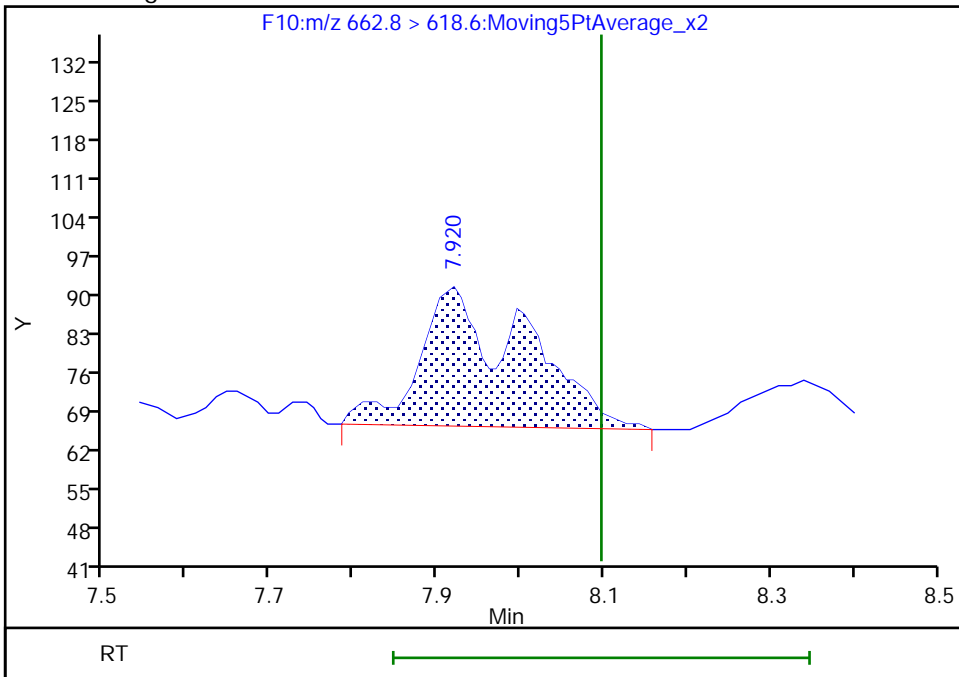
Not Detected
Expected RT: 8.10

Processing Integration Results



RT: 7.92
Area: 222
Amount: 0.017244
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:40:36
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

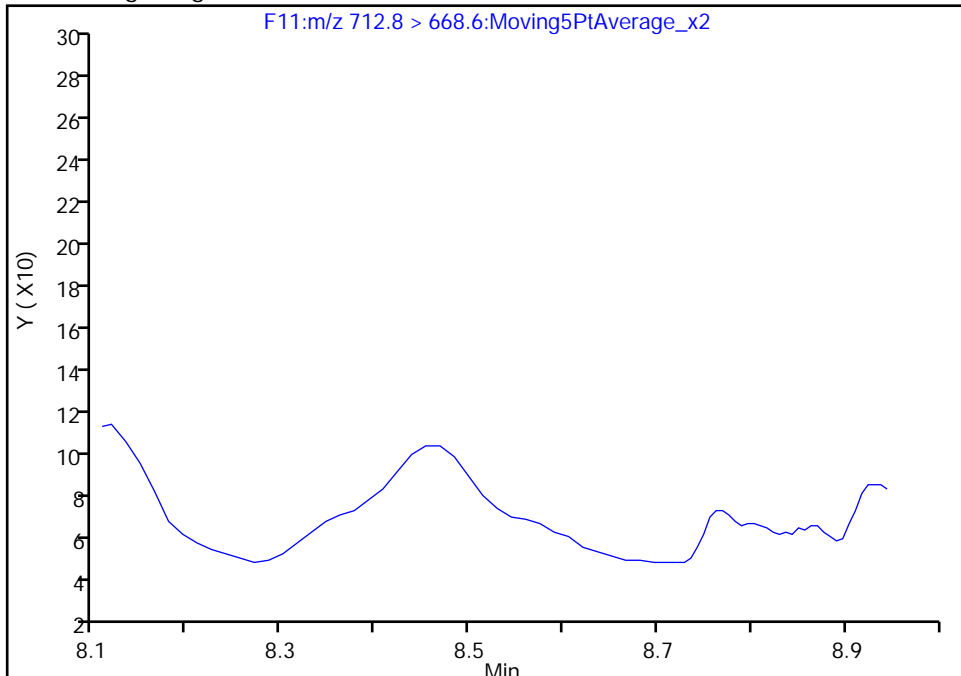
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

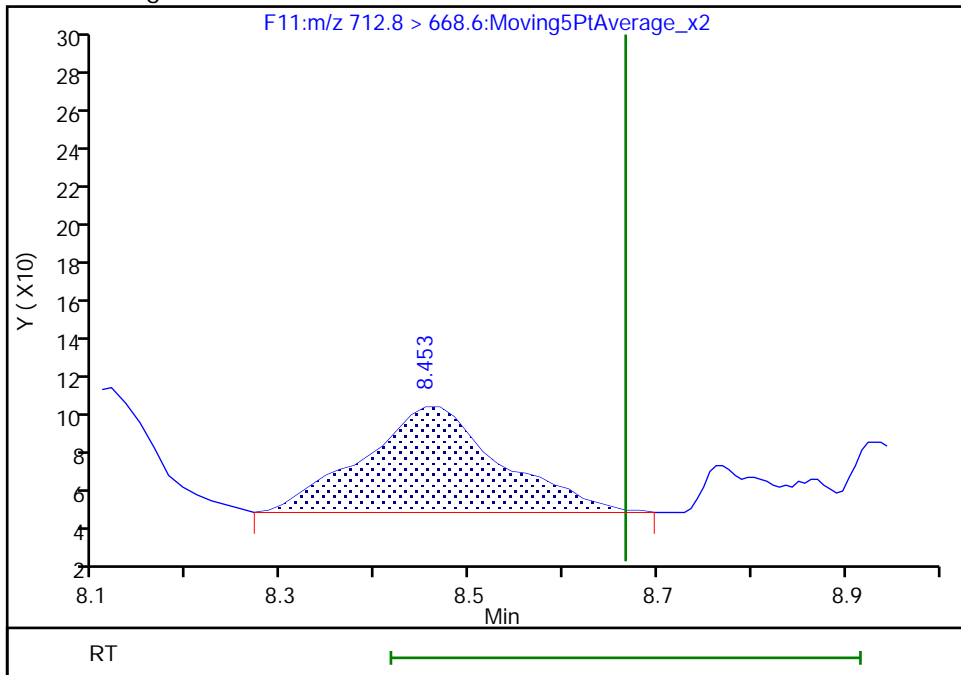
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.45
Area: 550
Amount: 0.042840
Amount Units: ng/ml



TestAmerica Burlington

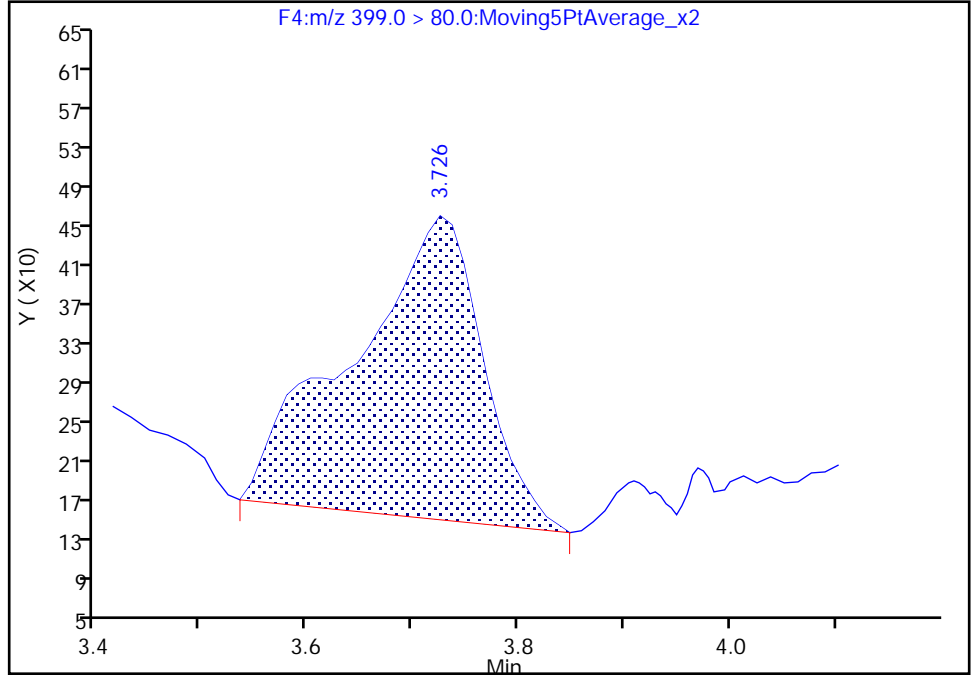
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

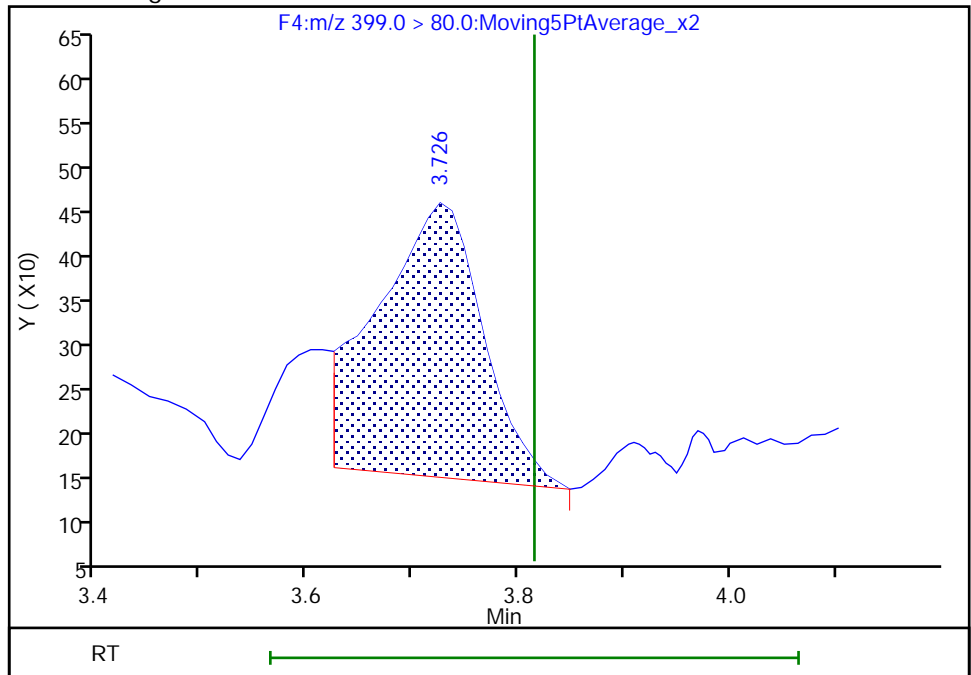
RT: 3.73
Area: 2589
Amount: 0.254109
Amount Units: ng/ml

Processing Integration Results



RT: 3.73
Area: 2115
Amount: 0.164162
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:39:34
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

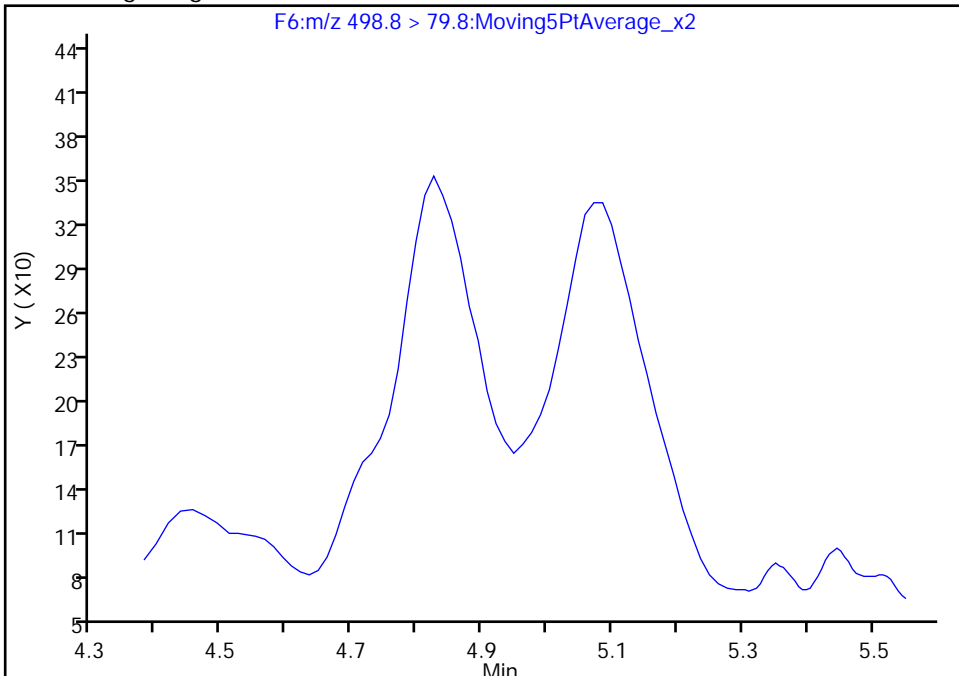
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

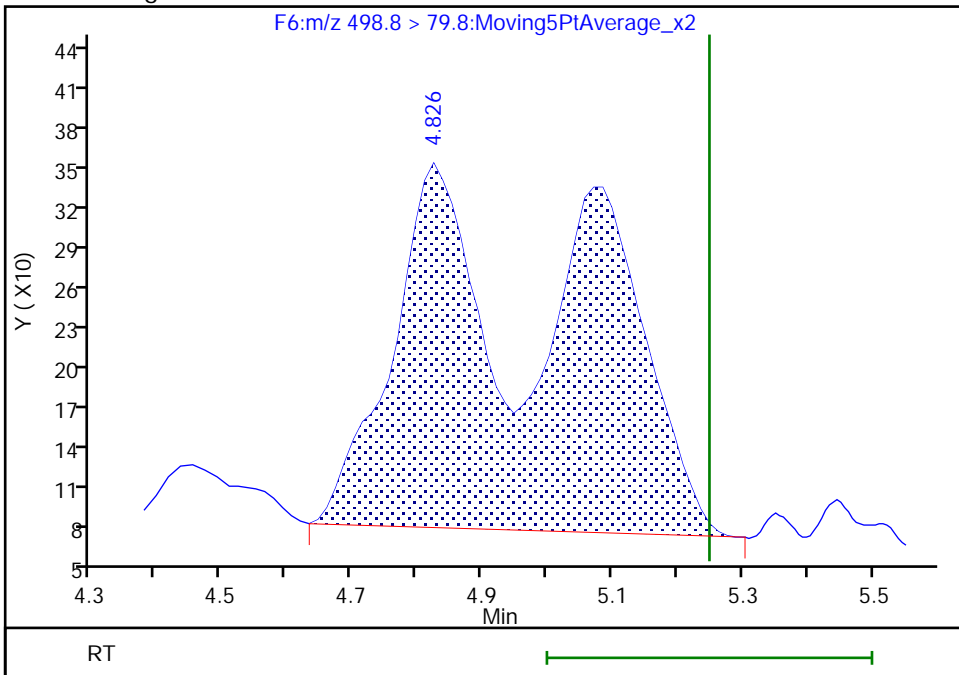
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 4.83
Area: 5110
Amount: 1.383695
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:41:00
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

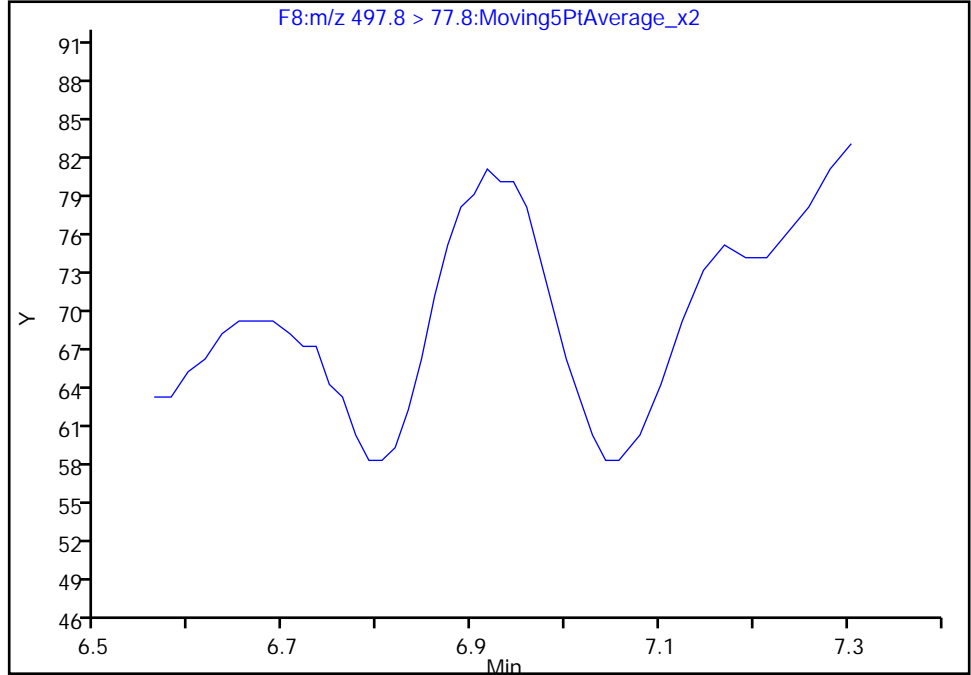
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

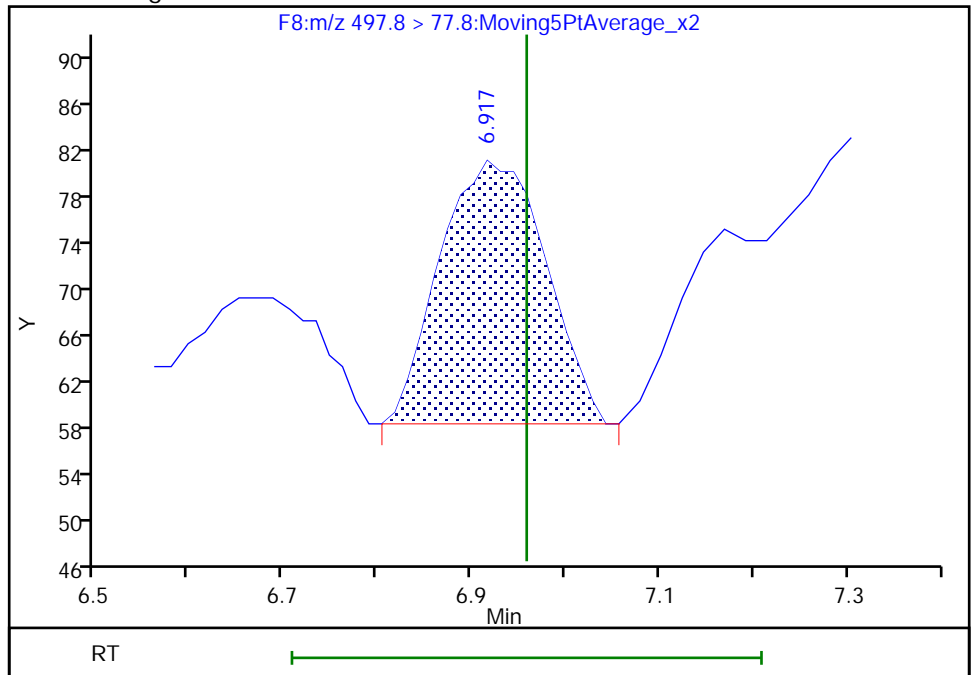
Not Detected
Expected RT: 6.96

Processing Integration Results



Manual Integration Results

RT: 6.92
Area: 179
Amount: 0.049670
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:40:44
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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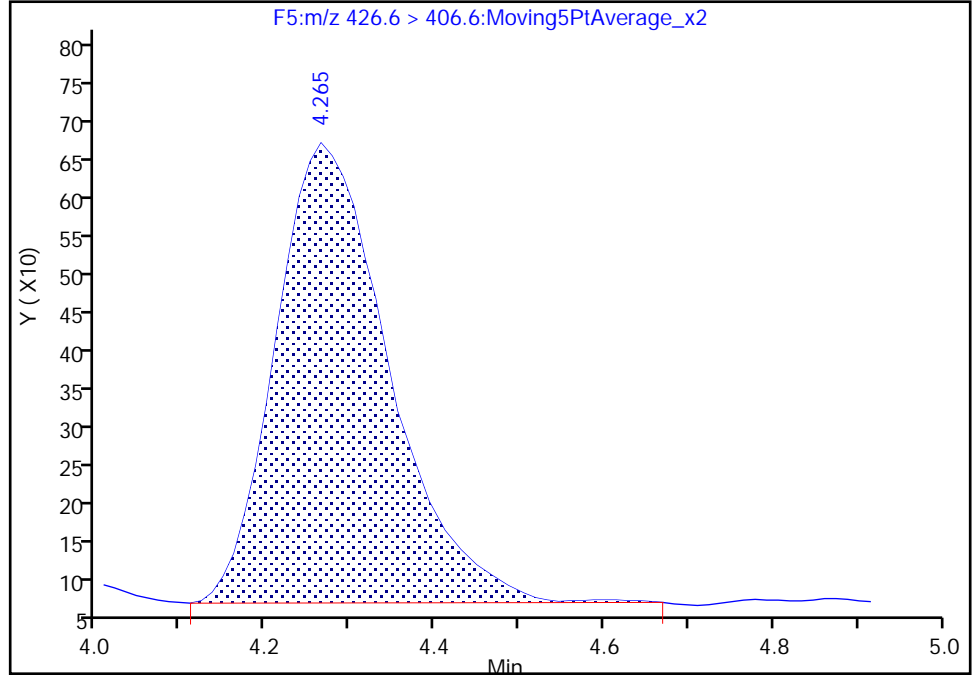
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Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

14 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

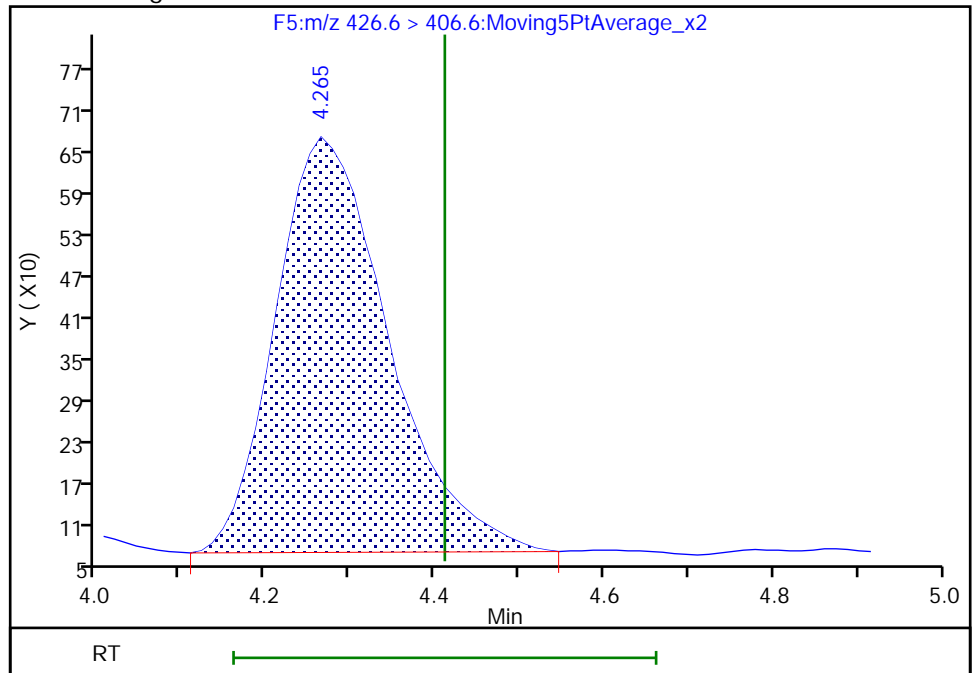
RT: 4.27
Area: 5596
Amount: 2.551452
Amount Units: ng/ml

Processing Integration Results



RT: 4.27
Area: 5564
Amount: 2.536862
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:39:43
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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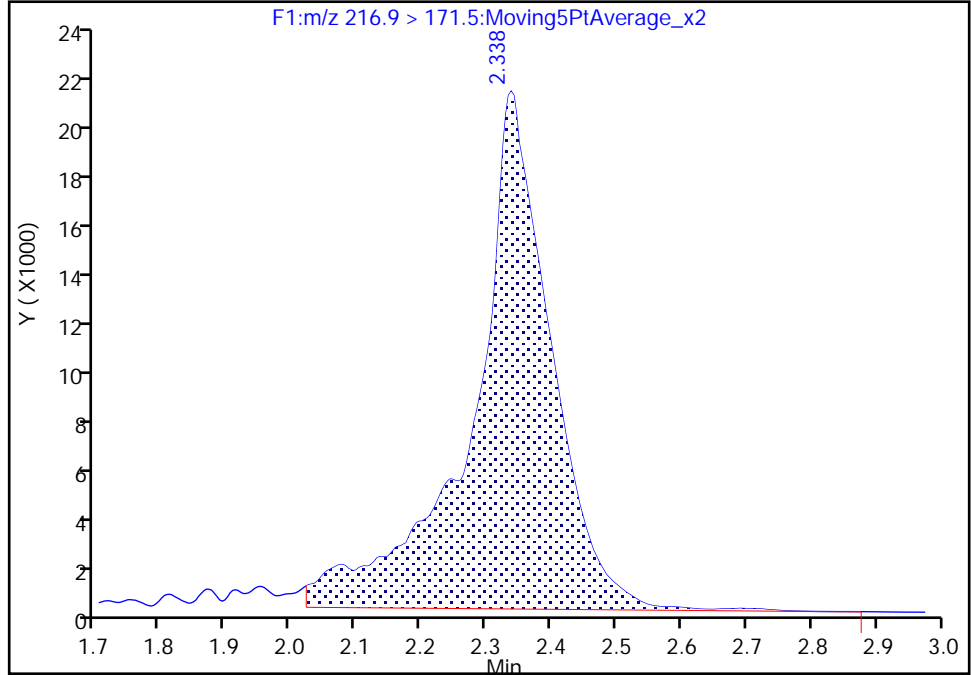
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d
Injection Date: 08-Jan-2019 11:29:37 Instrument ID: LC410
Lims ID: 480-147040-A-3-A Lab Sample ID: 200-147040-3
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 70
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

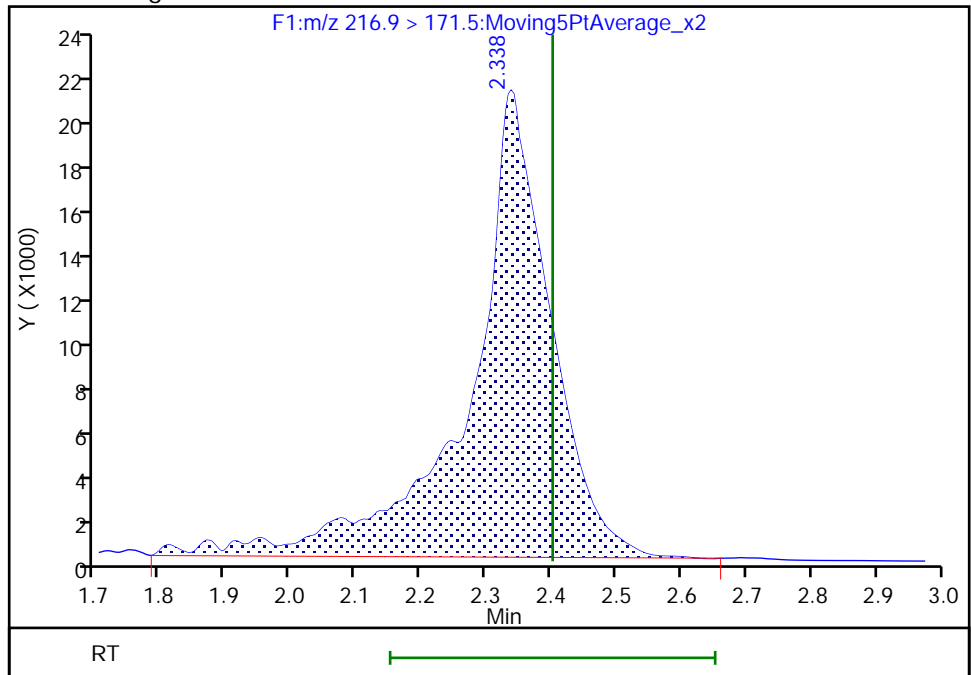
RT: 2.34
Area: 181444
Amount: 27.927894
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 186253
Amount: 28.668096
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:38:21
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

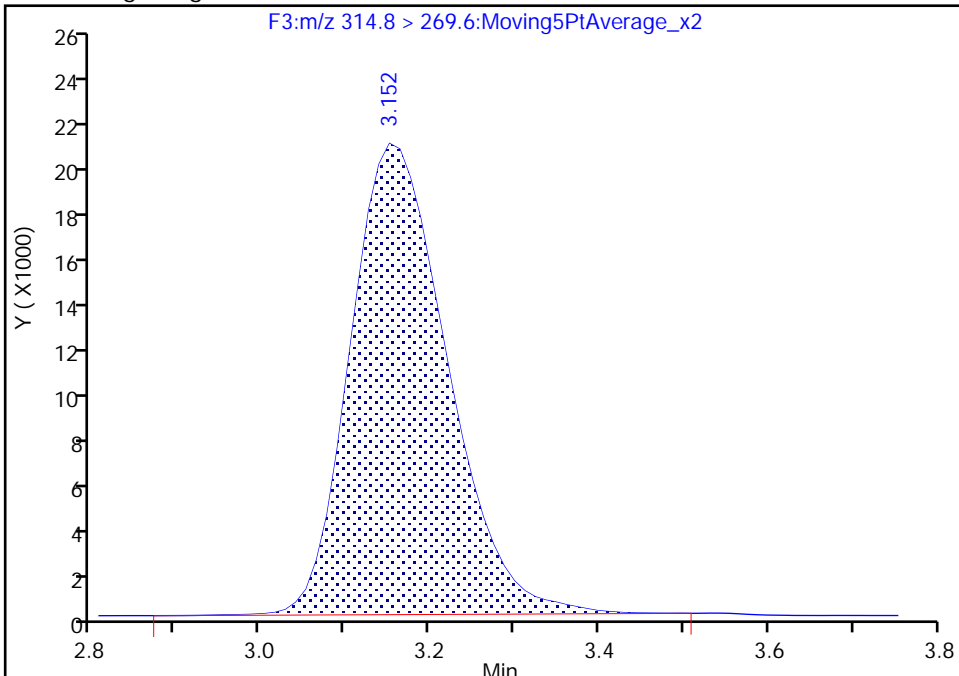
Data File:	\\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A70.d				
Injection Date:	08-Jan-2019 11:29:37	Instrument ID:	LC410		
Lims ID:	480-147040-A-3-A	Lab Sample ID:	200-147040-3		
Client ID:	MW-09-121918				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	70
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector:	F3:MRM		

D 7 13C2 PFHxA, CAS: STL00993

Signal: 1

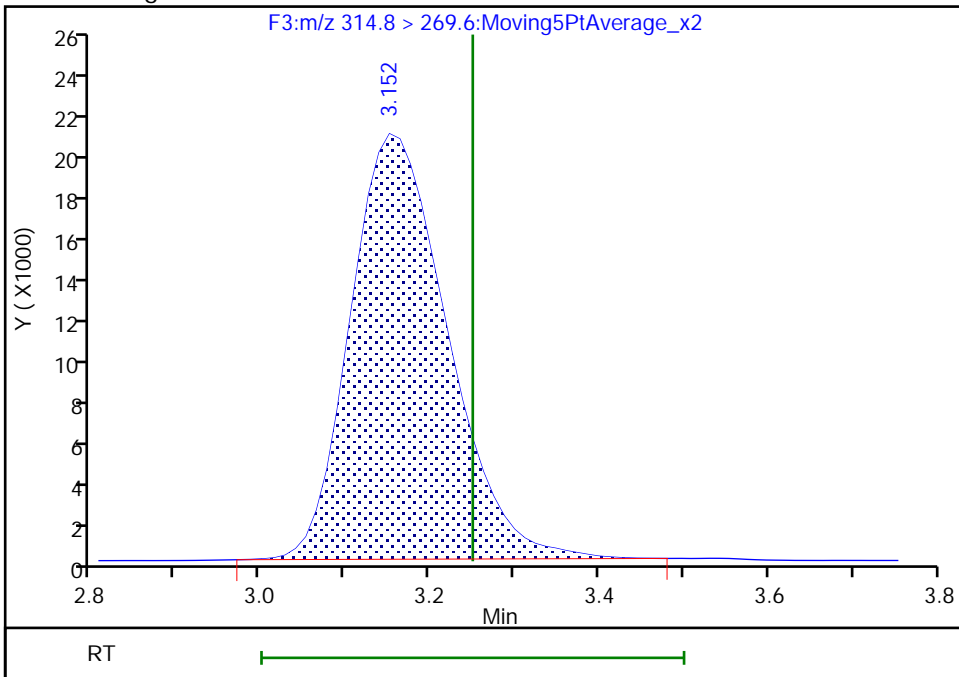
RT: 3.15
Area: 166962
Amount: 22.500193
Amount Units: ng/ml

Processing Integration Results



RT: 3.15
Area: 166348
Amount: 22.417449
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:39:12
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 216 of 589

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-10-121918 Lab Sample ID: 480-147040-4
 Matrix: Water Lab File ID: PF010719A73.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 13:50
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 286.9(mL) Date Analyzed: 01/08/2019 12:17
 Con. Extract Vol.: 0.5(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	6.1		1.7	0.36
2706-90-3	Perfluoropentanoic acid (PFPeA)	11		1.7	0.65
307-24-4	Perfluorohexanoic acid (PFHxA)	3.3		1.7	0.21
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.9		1.7	0.28
335-67-1	Perfluorooctanoic acid (PFOA)	3.2	B	1.7	0.28
375-95-1	Perfluorononanoic acid (PFNA)	0.44	J	1.7	0.33
335-76-2	Perfluorodecanoic acid (PFDA)	0.49	J	1.7	0.33
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.39	J B	1.7	0.22
307-55-1	Perfluorododecanoic acid (PFDoA)	0.32	J	1.7	0.30
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.27	J	1.7	0.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.39
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.5		1.7	0.38
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.23
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	5.1		1.7	0.66
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.46
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.49
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.39
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.61
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	0.87
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.49

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-10-121918 Lab Sample ID: 480-147040-4
 Matrix: Water Lab File ID: PF010719A73.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 13:50
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 286.9(mL) Date Analyzed: 01/08/2019 12:17
 Con. Extract Vol.: 0.5(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	96		50-150
STL01892	13C4 PFHpA	58		50-150
STL00990	13C4 PFOA	78		50-150
STL00991	13C4 PFOS	105		50-150
STL00995	13C5 PFNA	84		50-150
STL00992	13C4 PFBA	25		25-150
STL00993	13C2 PFHxA	35	*	50-150
STL00996	13C2 PFDA	98		50-150
STL00997	13C2 PFUnA	107		50-150
STL00998	13C2 PFDoA	98		50-150
STL01056	13C8 FOSA	73		25-150
STL01893	13C5 PFPeA	32		25-150
STL02116	13C2 PFTeDA	102		50-150
STL02118	d3-NMeFOSAA	66		50-150
STL02117	d5-NEtFOSAA	98		50-150
STL02279	M2-6:2 FTS	251	*	25-150
STL02280	M2-8:2 FTS	211	*	25-150
STL02337	13C3 PFBS	68		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
 Lims ID: 480-147040-A-4-A
 Client ID: MW-10-121918
 Sample Type: Client
 Inject. Date: 08-Jan-2019 12:17:26 ALS Bottle#: 0 Worklist Smp#: 73
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-073 4
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:35:28 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 17:48:42
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.330	2.402	-0.072	1.000	63556	12.3	24.7	61.8	M
2 Perfluorobutanoic acid	212.9 > 168.9	2.322	2.402	-0.080	0.997	3954	3.48		9.9	M
D 3 13C5 PFPeA	267.7 > 222.6	2.739	2.818	-0.079	1.000	51957	15.9	31.8	66.5	M
4 Perfluoropentanoic acid	262.9 > 218.8	2.729	2.818	-0.089	0.996	19333	6.53		2.2	M
D 6 13C3 PFBS	302.0 > 79.8	2.791	2.900	-0.109	1.000	84965	31.5	67.7	110	M
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.834	2.900	-0.066	1.015	6319	1.98		1.8	M
D 7 13C2 PFHxA	314.8 > 269.6	3.115	3.250	-0.135	1.000	102853	17.5	34.9	190	M
8 Perfluorohexanoic acid	312.8 > 268.6	3.103	3.250	-0.147	0.996	4062	1.90		1.8	M
D 9 13C4 PFHpA	366.9 > 321.8	3.592	3.782	-0.190	1.000	313572	29.1	58.2	532	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.603	3.782	-0.179	1.003	6650	1.08		5.6	M
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.625	3.815	-0.190	1.000	1644	0.1248		2.6	
D 11 18O2 PFHxS	402.9 > 83.8	3.625	3.826	-0.201	1.000	141173	45.3	95.7	376	
D 13 M2-6:2 FTS	428.6 > 408.6	4.188	4.411	-0.223	1.000	114549	119.1	251	532	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.214	4.411	-0.197	1.006	84	0.0354		1.8	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.227	4.449	-0.222	1.000	11818	1.86			6.8	M
D 17 13C4 PFOA										
416.9 > 371.8	4.227	4.468	-0.241	1.000	320791	39.0		77.9	1148	
* 15 13C2 PFOA										M
414.9 > 369.8	4.227	4.468	-0.241		438612	50.0			470	M
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.430	4.505	-0.075	0.883	278	0.1007			1.0	M
D 20 13C5 PFNA										
467.8 > 422.8	4.990	5.222	-0.232	1.000	468657	42.2		84.4	1056	
19 Perfluorononanoic acid										M
462.8 > 418.8	4.990	5.222	-0.232	1.000	2610	0.2533			3.5	M
D 22 13C4 PFOS										
502.8 > 79.8	5.017	5.236	-0.219	1.000	138235	50.1		105	339	
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	5.031	5.250	-0.219	1.003	8802	2.94			17.6	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.763	5.998	-0.235	1.000	262850	100.8		211	976	
25 Perfluorodecanoic acid										M
512.9 > 468.5	5.773	6.022	-0.249	0.998	3226	0.2838			7.6	M
D 26 13C2 PFDA										
514.9 > 469.5	5.783	6.022	-0.239	1.000	563078	49.2		98.4	2445	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.156	6.367	-0.211	1.000	96989	33.2		66.3	637	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.526	6.734	-0.208	1.000	121843	49.1		98.2	630	
31 Perfluorodecanesulfonic acid										M
598.8 > 79.8	6.490	6.762	-0.272	1.294	724	0.2393			4.5	M
30 N-ethylperfluorooctanesulfonamidoa										M
583.9 > 418.8	6.508	6.762	-0.254	0.997	102	0.0435			2.1	M
D 32 13C2 PFUnA										
564.8 > 519.8	6.562	6.777	-0.215	1.000	636416	53.4		107	1564	
33 Perfluoroundecanoic acid										M
562.8 > 518.6	6.544	6.777	-0.233	0.997	2933	0.2246			8.7	M
D 35 13C8 FOSA										
505.8 > 77.8	6.931	6.945	-0.014	1.000	192915	36.3		72.5	968	
34 Perfluorooctanesulfonamide										M
497.8 > 77.8	6.987	6.959	0.028	1.008	222	0.0680			3.5	M
D 37 13C2 PFDoA										
614.8 > 569.6	7.272	7.474	-0.202	1.000	739057	49.0		98.1	2737	
36 Perfluorododecanoic acid										M
612.8 > 568.6	7.294	7.474	-0.180	1.003	2324	0.1832			15.9	M
38 Perfluorotridecanoic acid										M
662.8 > 618.6	7.920	8.097	-0.177	0.935	2106	0.1523			20.8	M

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.499	8.666	-0.167	1.004	1826	0.1324	Target=1.00		9.0	M
712.8 > 168.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
712.8 > 218.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
D 40 13C2 PFTeDA										
714.8 > 669.6	8.468	8.681	-0.213	1.000	707202	51.1		102	1002	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d

Injection Date: 08-Jan-2019 12:17:26

Instrument ID: LC410

Lims ID: 480-147040-A-4-A

Lab Sample ID: 200-147040-4

Client ID: MW-10-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 73

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

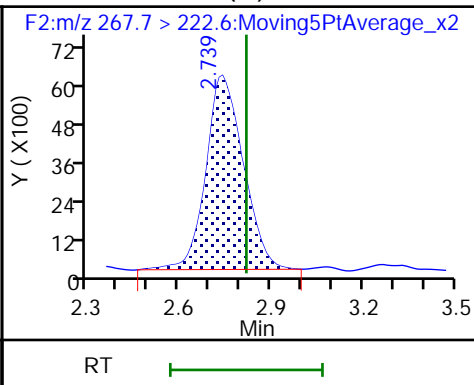
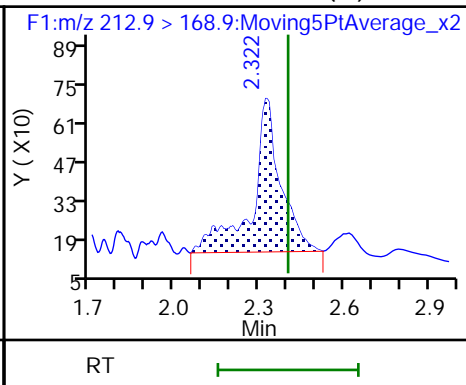
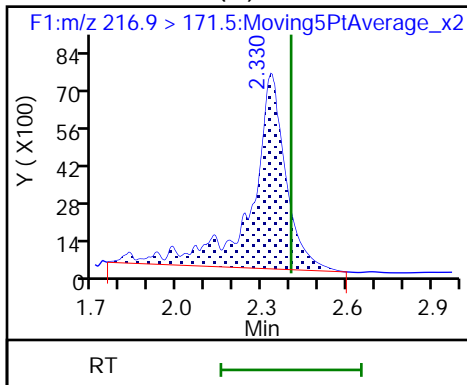
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

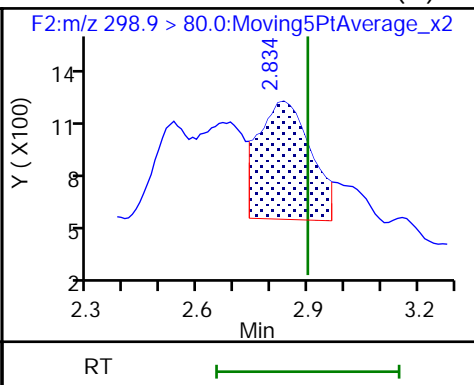
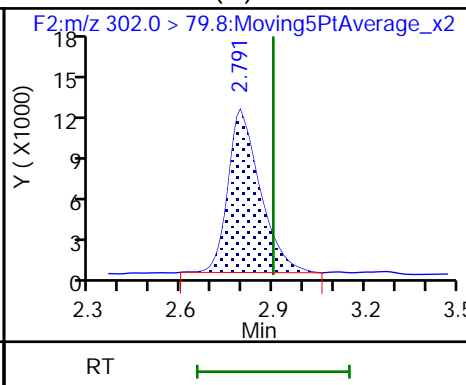
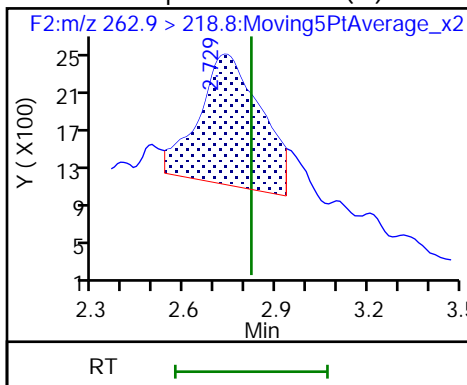
D 3 13C5 PFPeA (M)



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS (M)

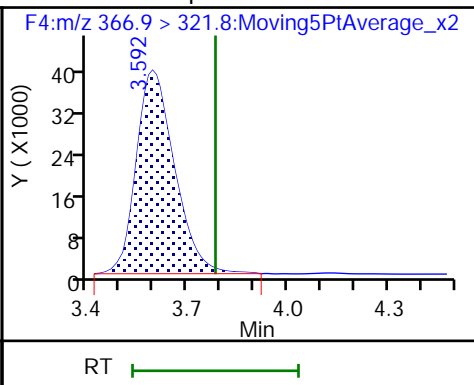
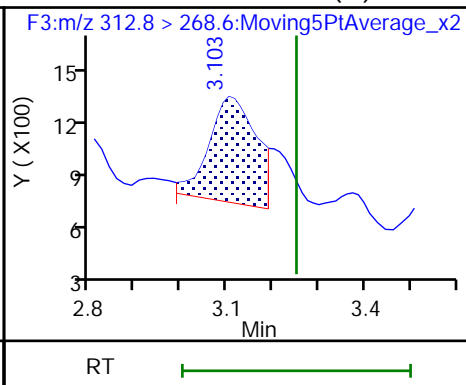
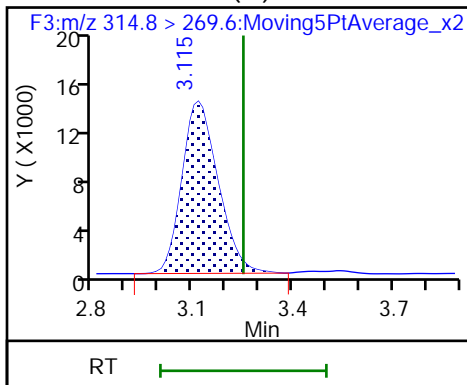
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA (M)

8 Perfluorohexanoic acid (M)

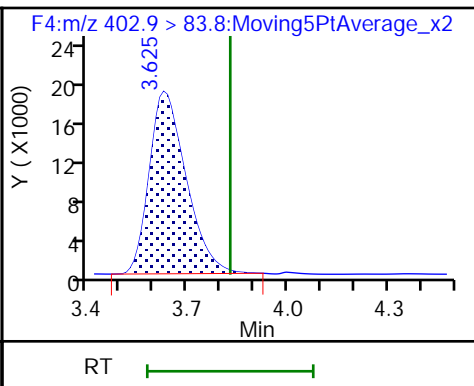
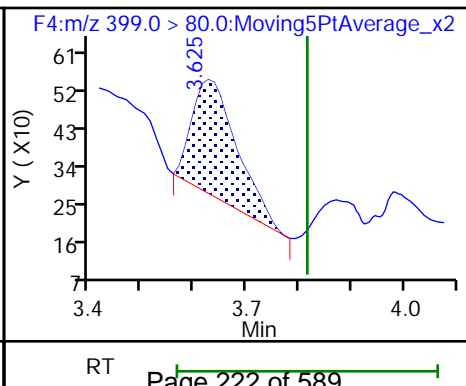
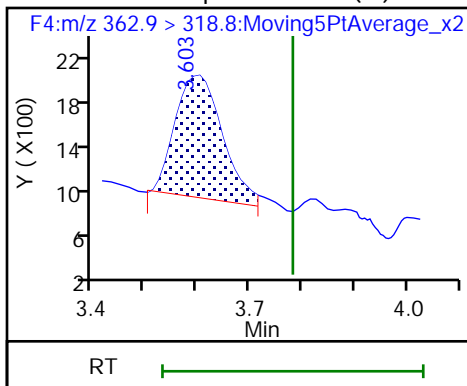
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

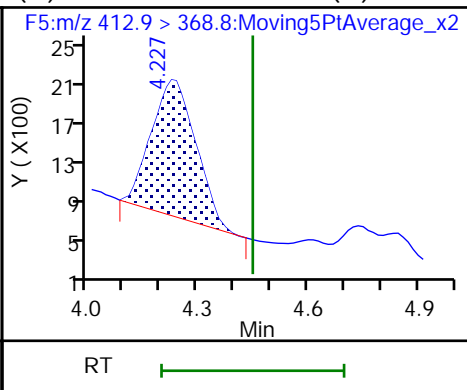
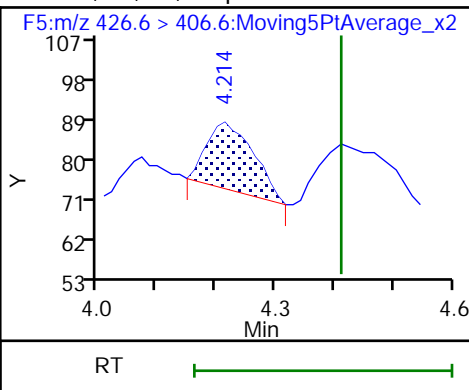
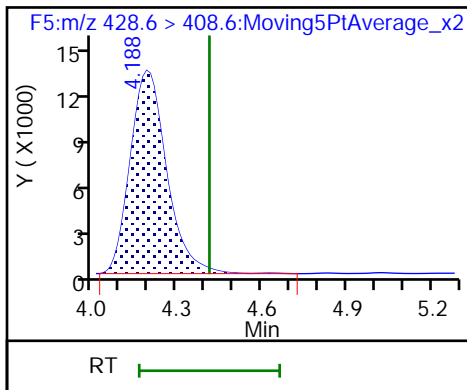
12 Perfluorohexanesulfonic acid

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

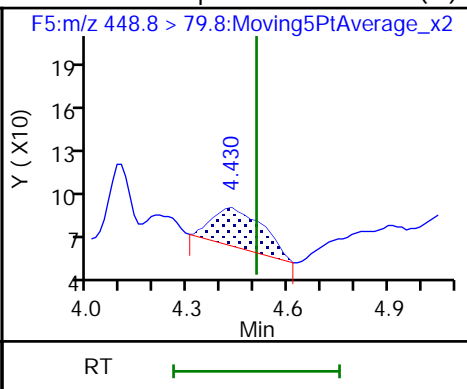
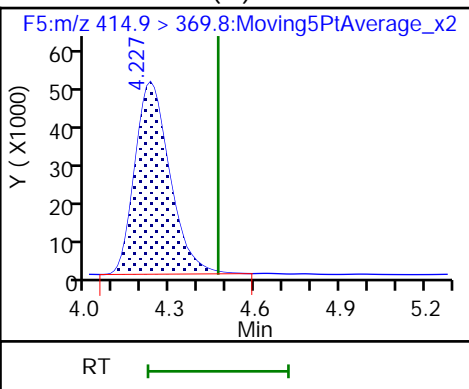
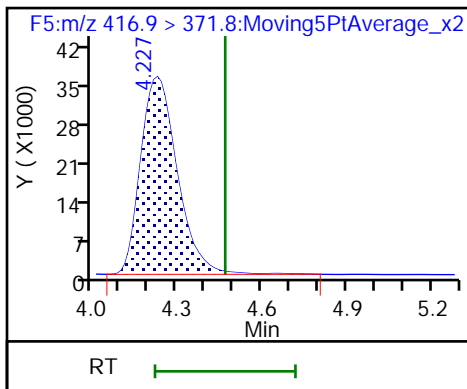
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA (M)

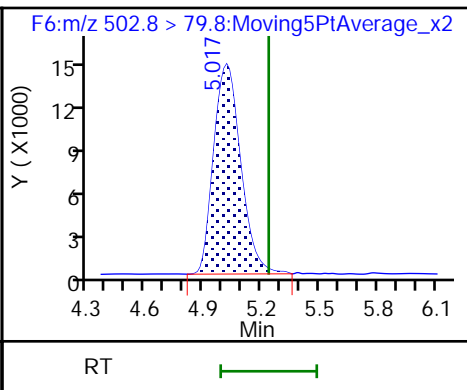
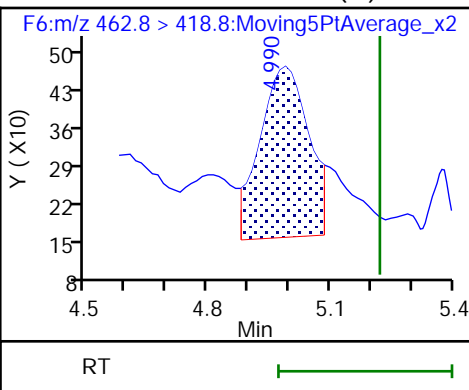
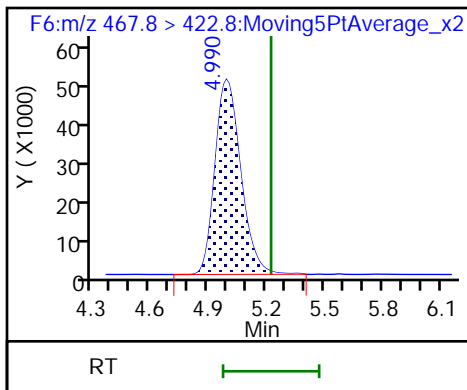
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

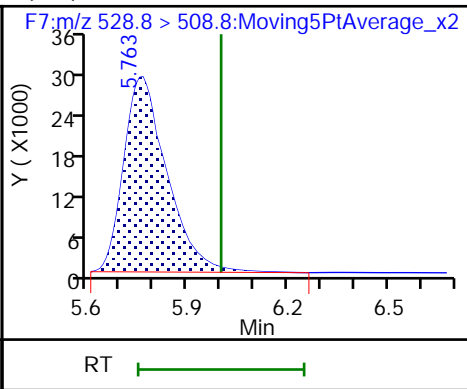
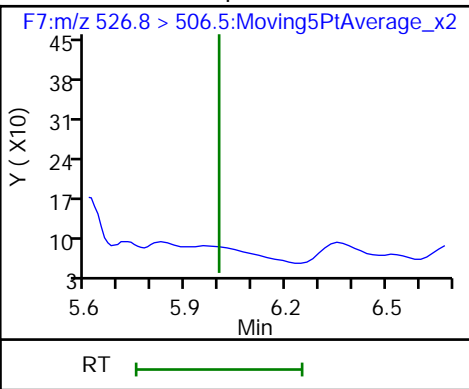
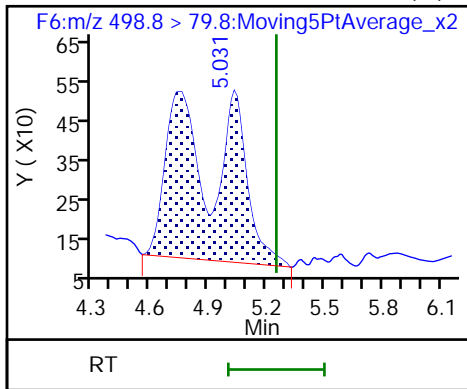
19 Perfluorononanoic acid (M)

D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid (M)

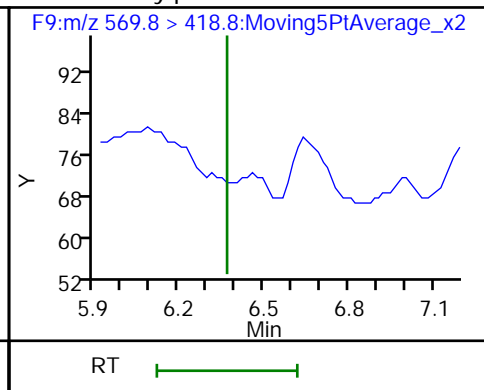
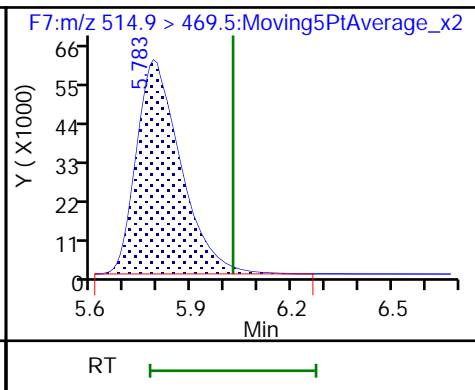
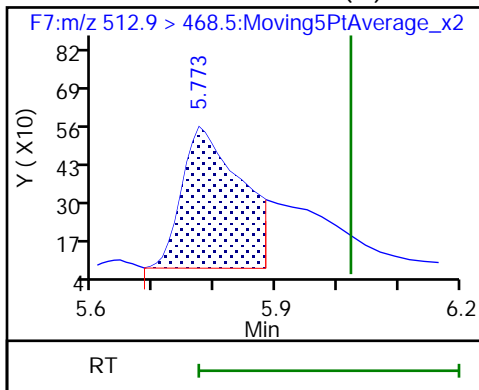
23 1H,1H,2H,2H-perfluorodecanesulfoni (M) M2-8:2 FTS



25 Perfluorodecanoic acid (M)

D 26 13C2 PFDA

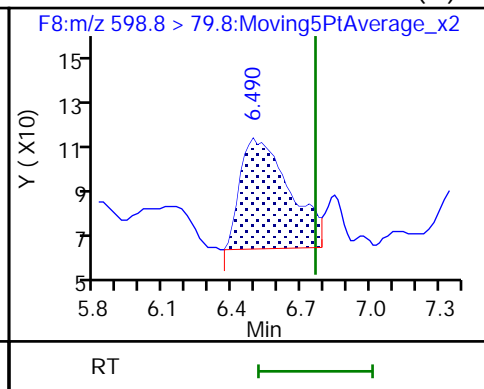
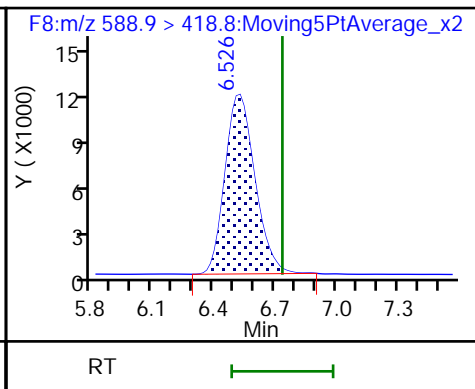
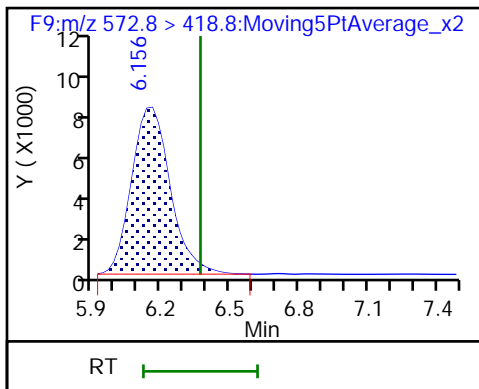
28 N-methylperfluorooctanesulfonamido (ND)



D 27 d3-NMeFOSAA

D 29 d5-NEtFOSAA

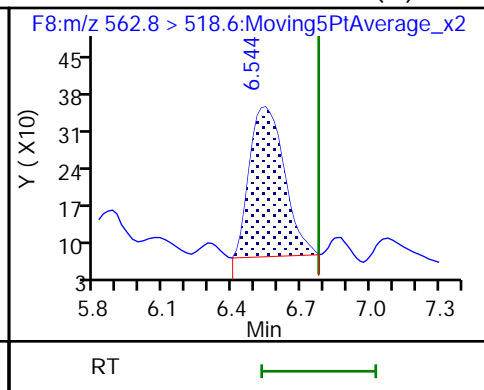
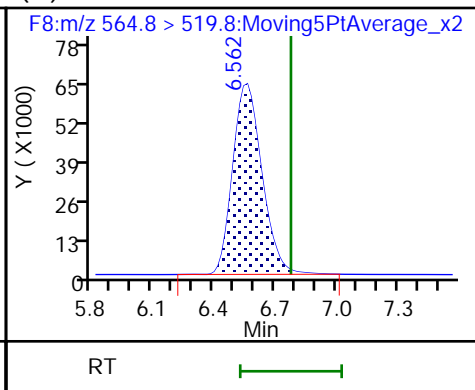
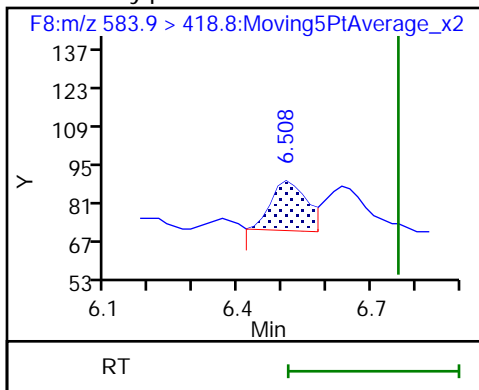
31 Perfluorodecanesulfonic acid (M)



30 N-ethylperfluorooctanesulfonamido (M)

D 32 13C2 PFUnA

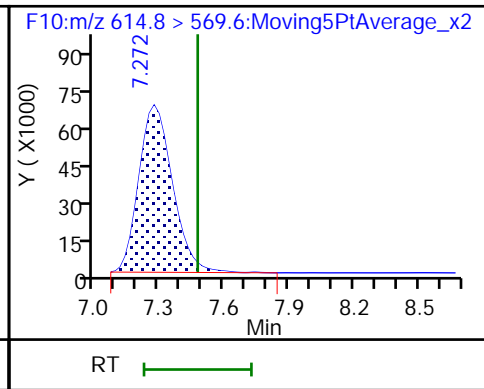
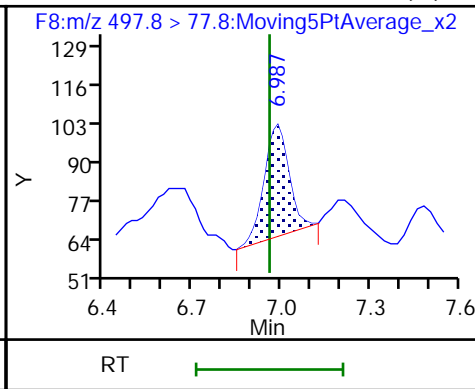
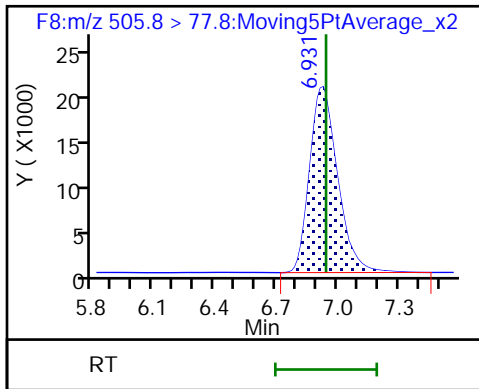
33 Perfluoroundecanoic acid (M)

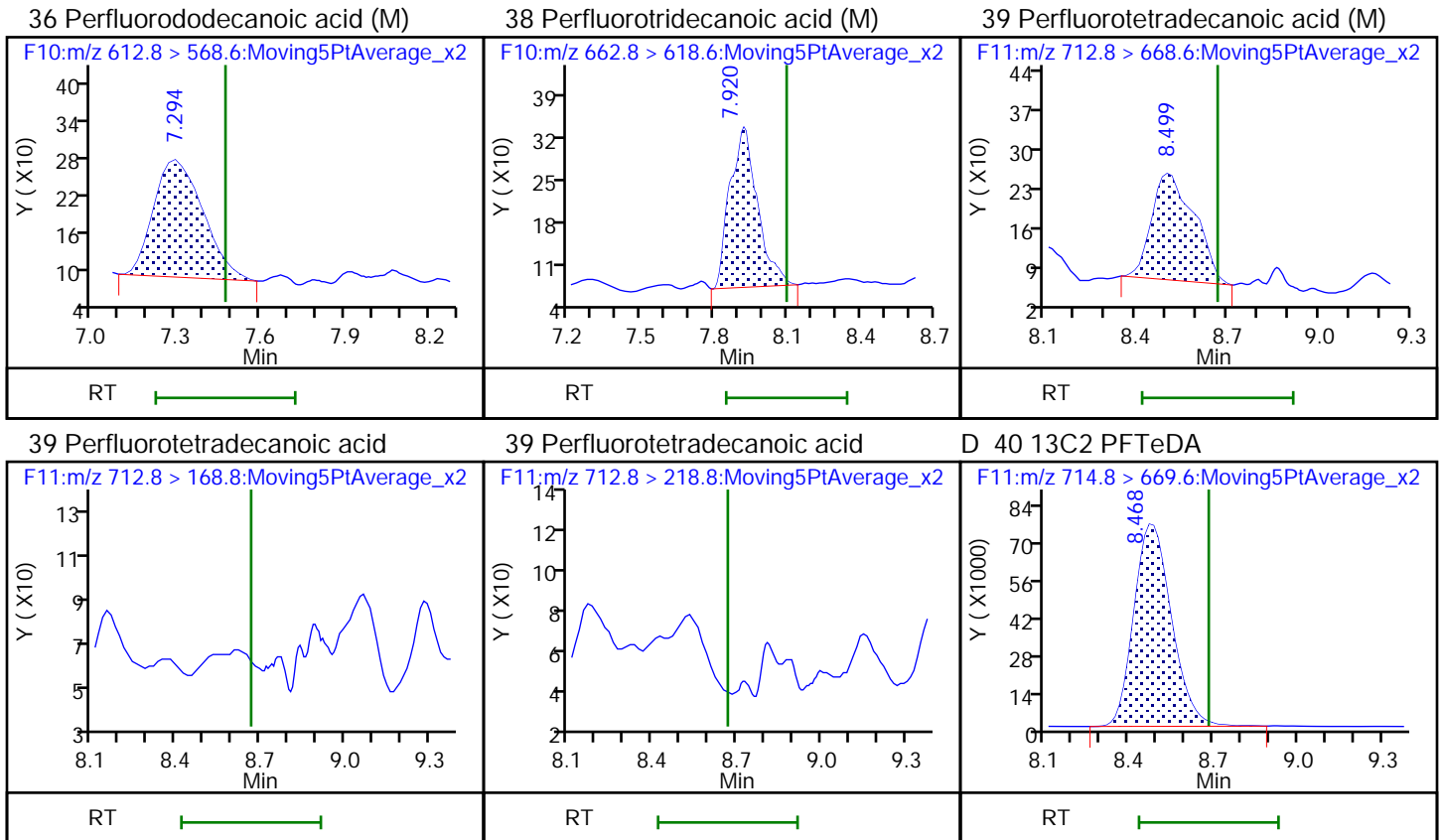


D 35 13C8 FOSA

34 Perfluorooctanesulfonamide (M)

D 37 13C2 PFDoA





TestAmerica Burlington

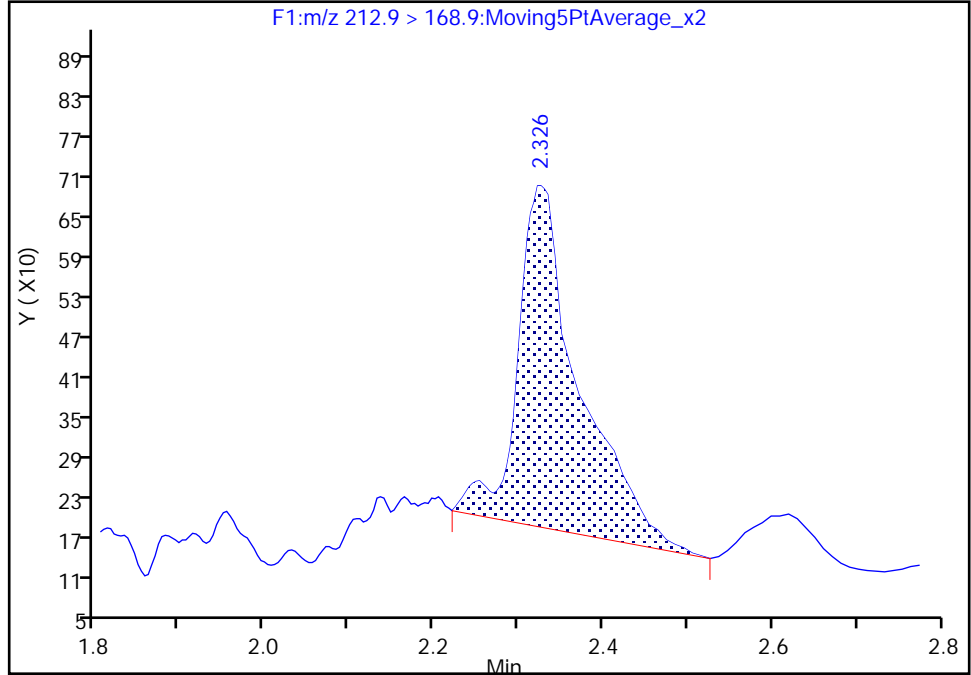
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

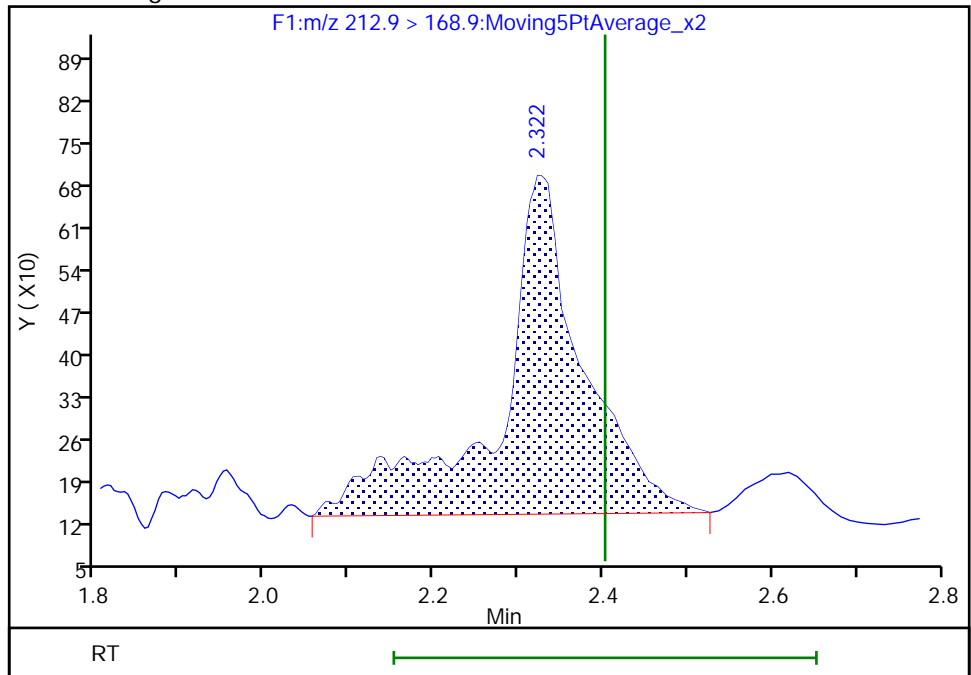
RT: 2.33
Area: 2596
Amount: 2.220025
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 3954
Amount: 3.480963
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:14
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

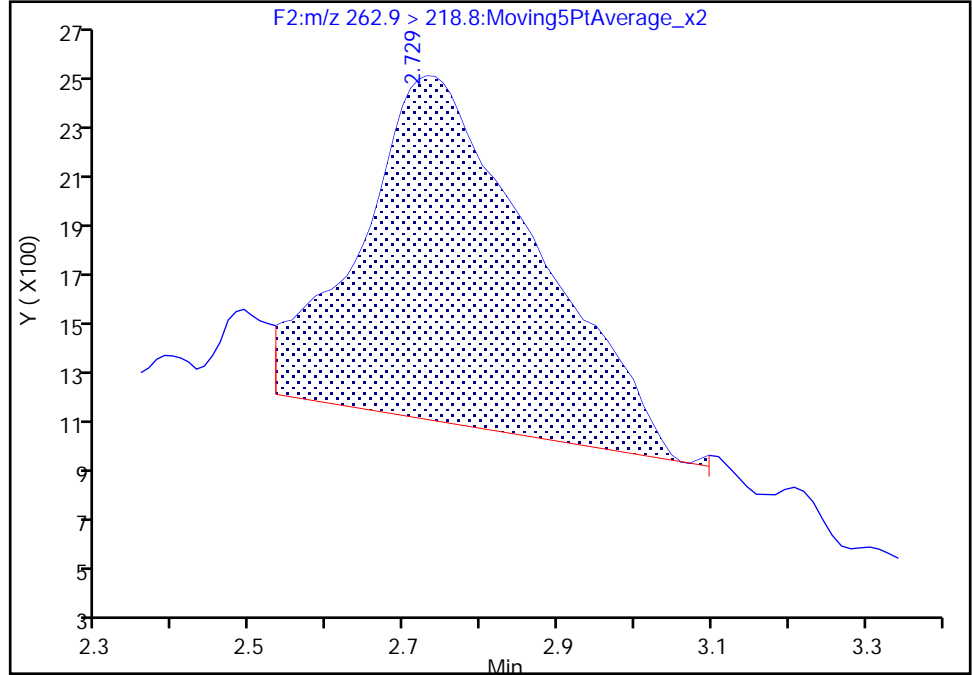
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

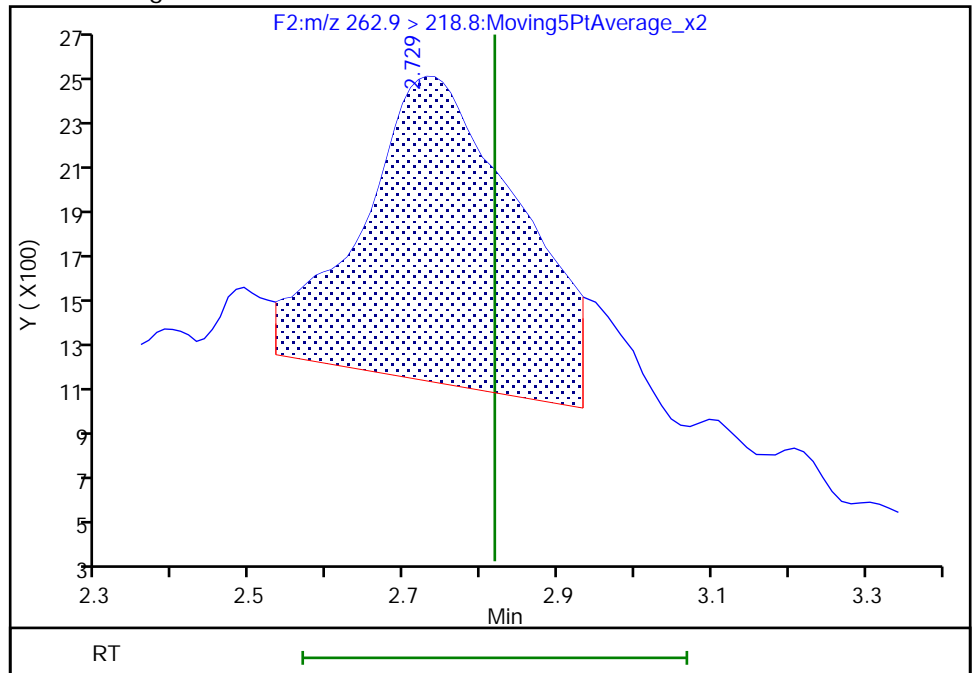
RT: 2.73
Area: 22066
Amount: 7.456260
Amount Units: ng/ml

Processing Integration Results



RT: 2.73
Area: 19333
Amount: 6.532760
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:29
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

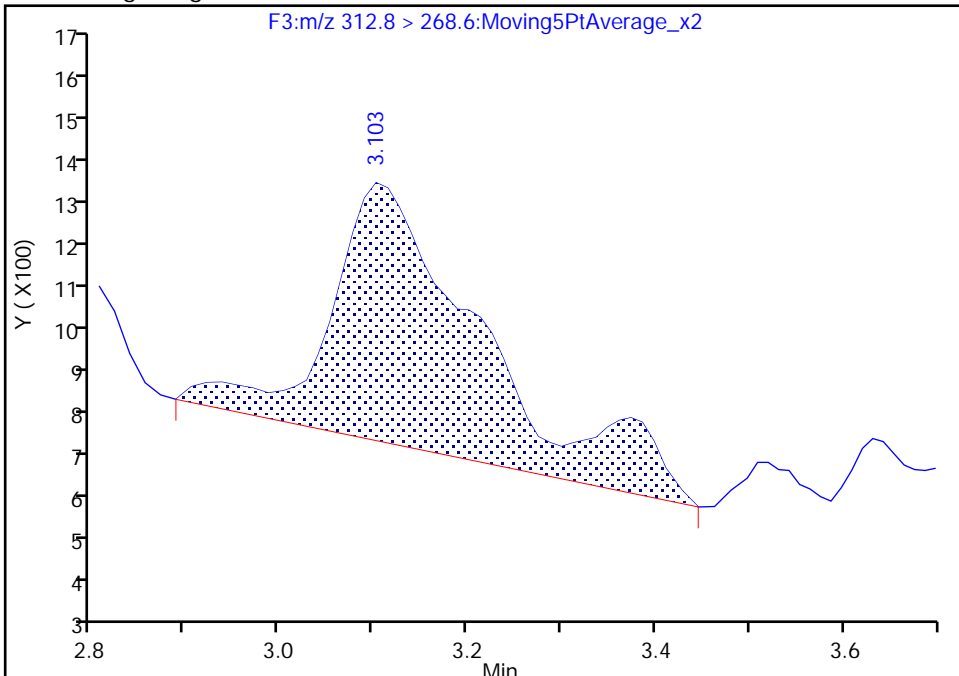
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

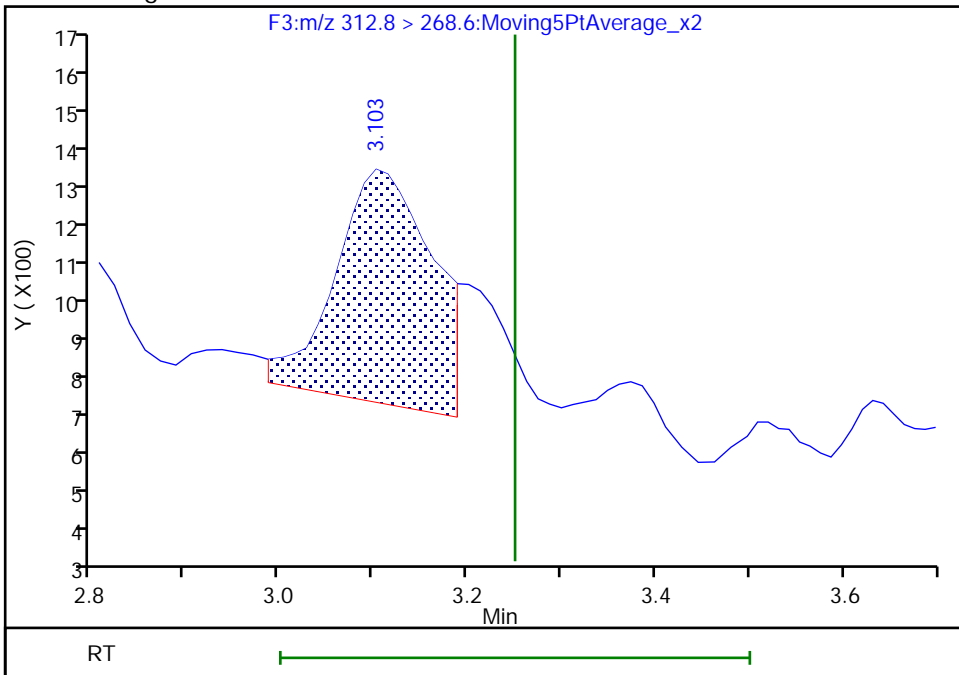
RT: 3.10
Area: 6599
Amount: 3.091877
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 4062
Amount: 1.903198
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:53
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

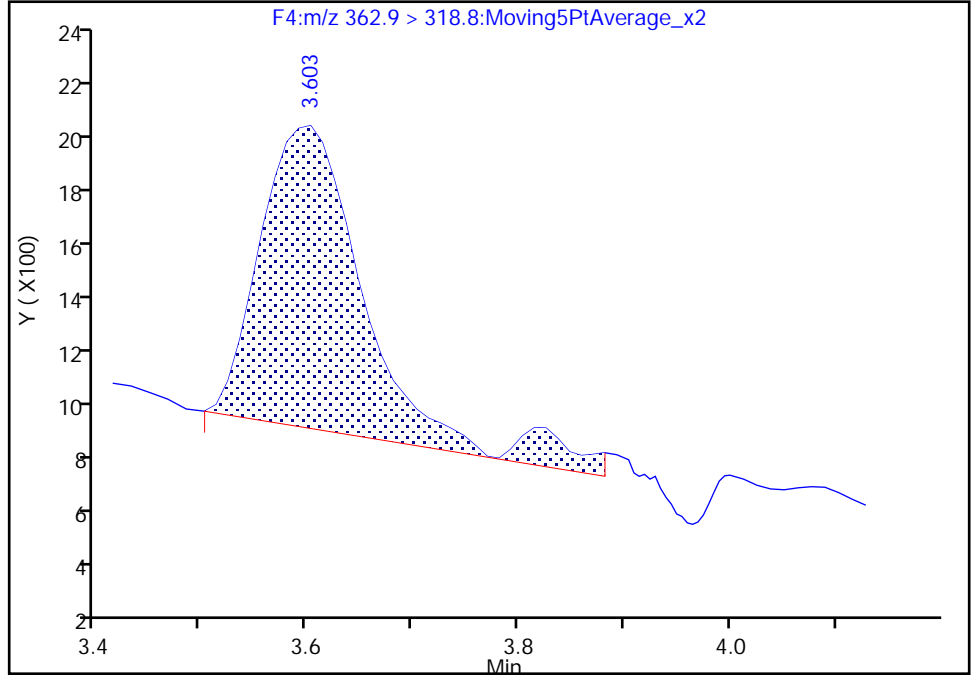
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

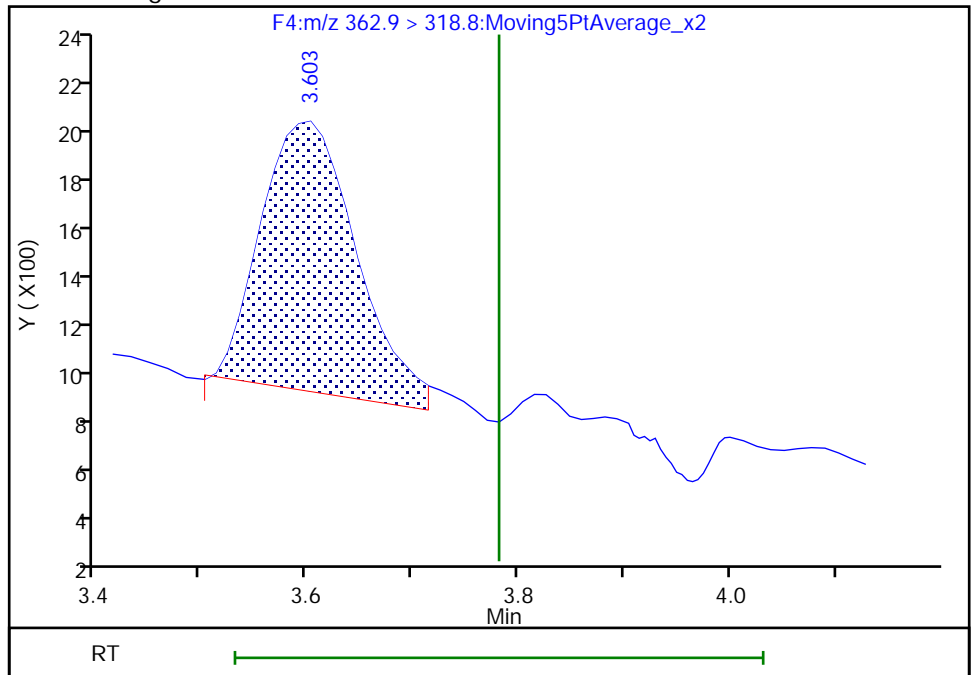
RT: 3.60
Area: 7527
Amount: 1.227886
Amount Units: ng/ml

Processing Integration Results



RT: 3.60
Area: 6650
Amount: 1.084820
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:46:09
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

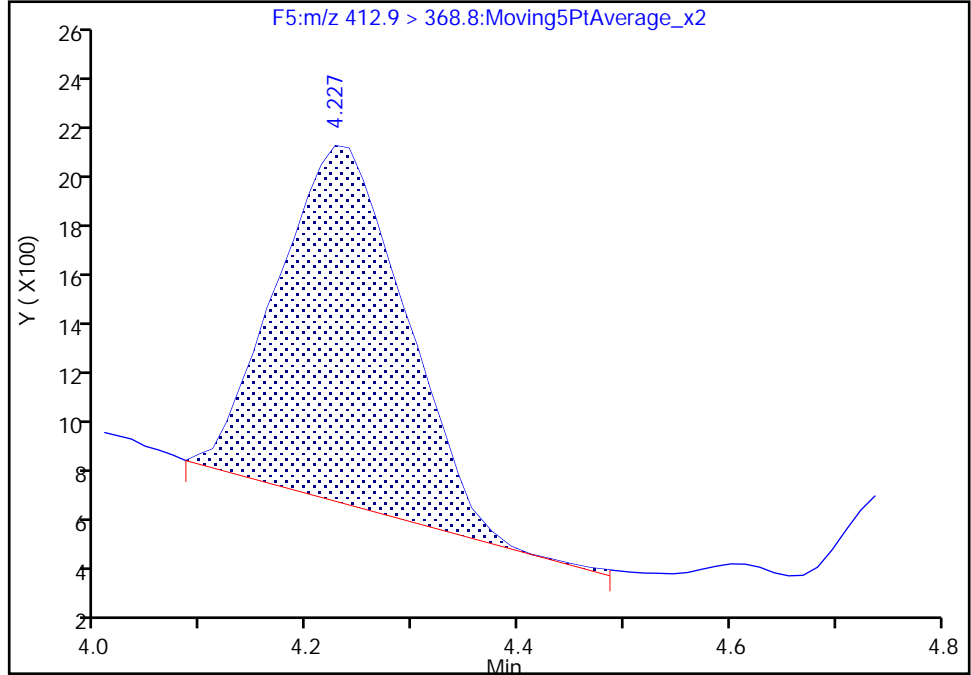
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

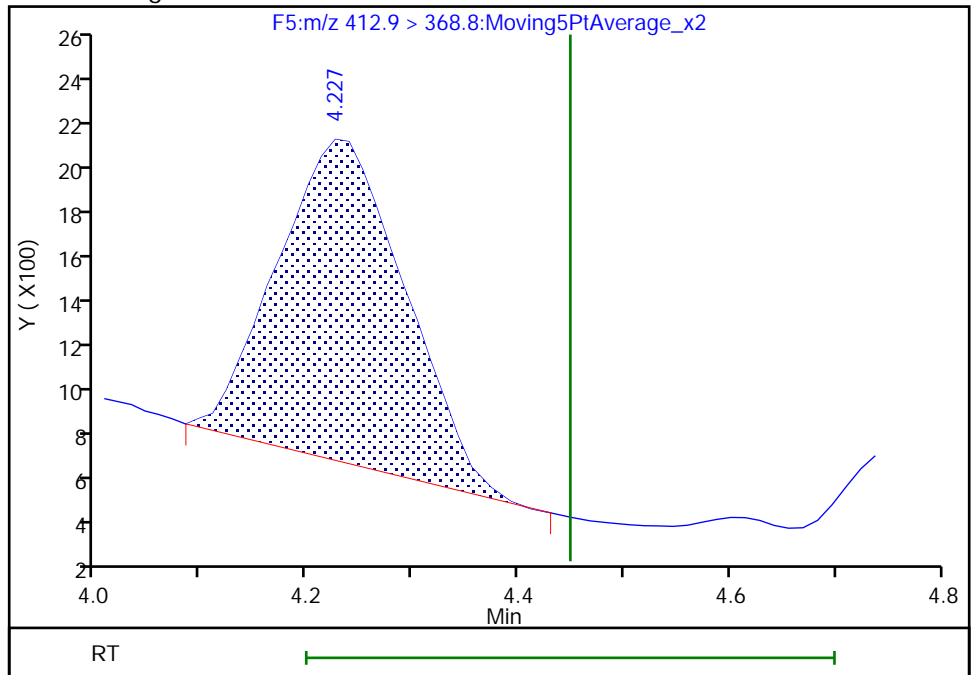
RT: 4.23
Area: 11896
Amount: 1.873059
Amount Units: ng/ml

Processing Integration Results



RT: 4.23
Area: 11818
Amount: 1.860777
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:46:17
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

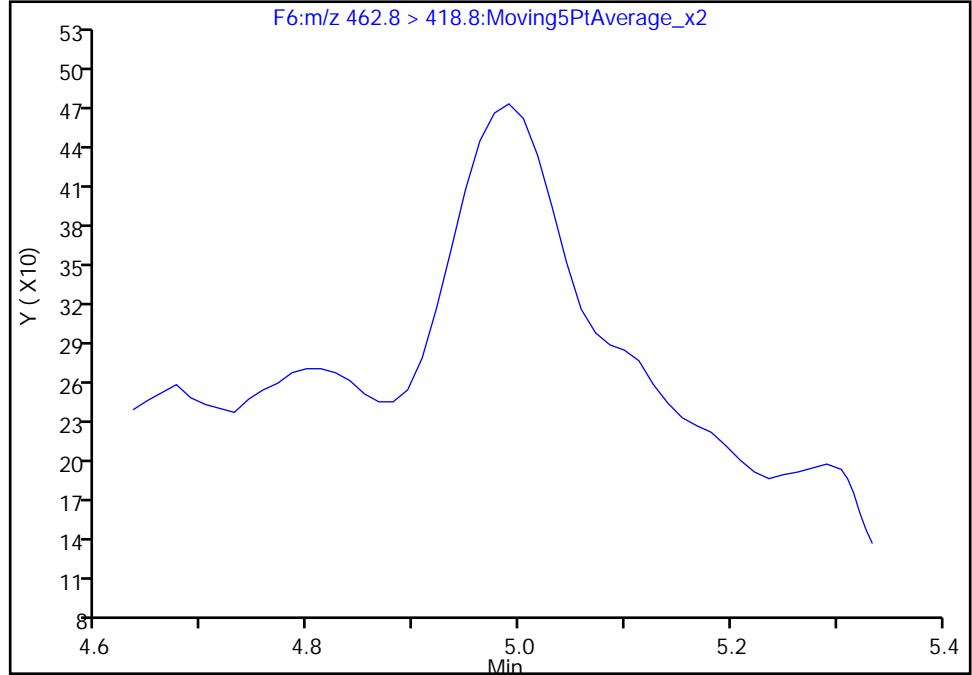
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:M/RM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

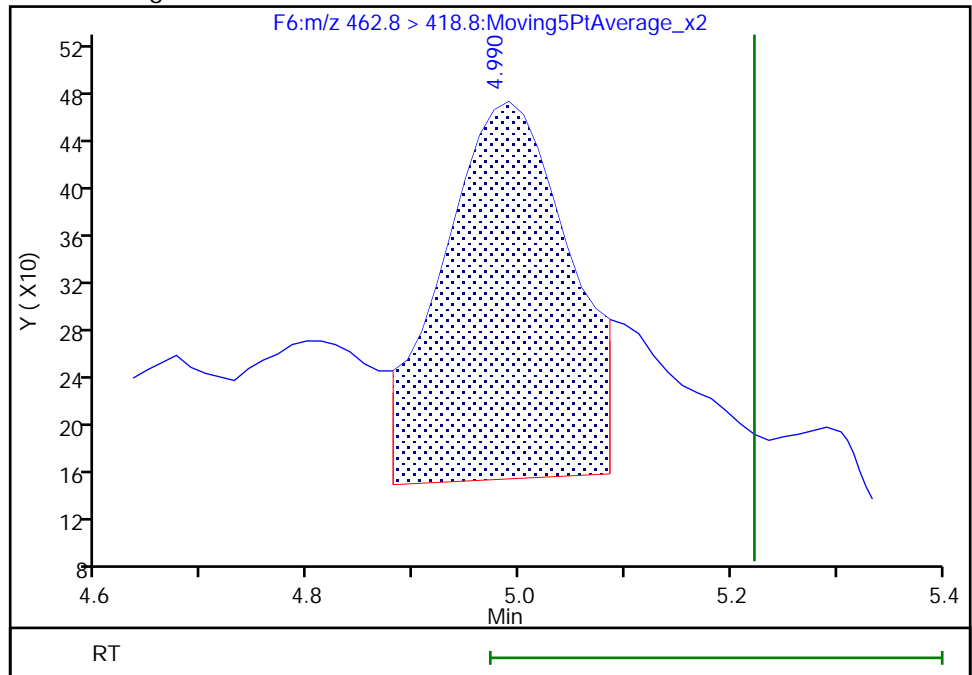
Not Detected
Expected RT: 5.22

Processing Integration Results



RT: 4.99
Area: 2610
Amount: 0.253308
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

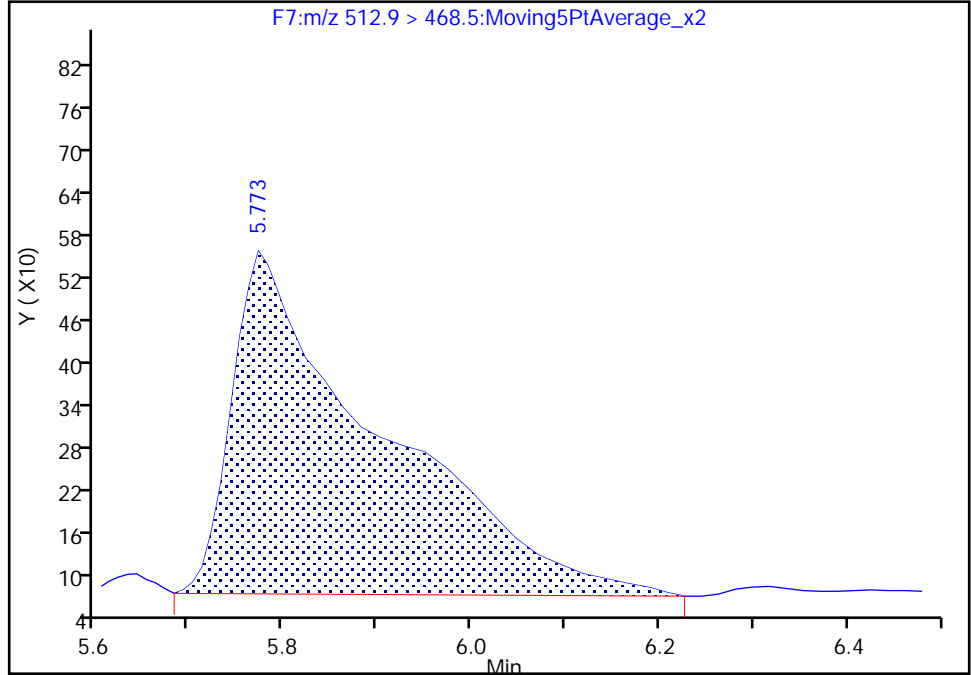
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

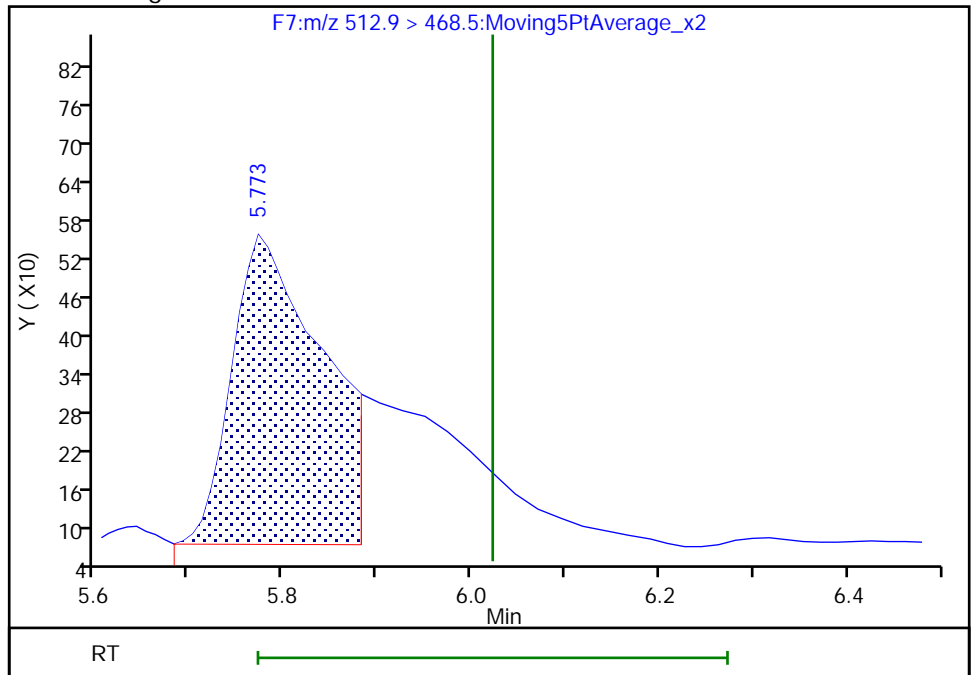
RT: 5.77
Area: 5289
Amount: 0.465237
Amount Units: ng/ml

Processing Integration Results



RT: 5.77
Area: 3226
Amount: 0.283769
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:46:31
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

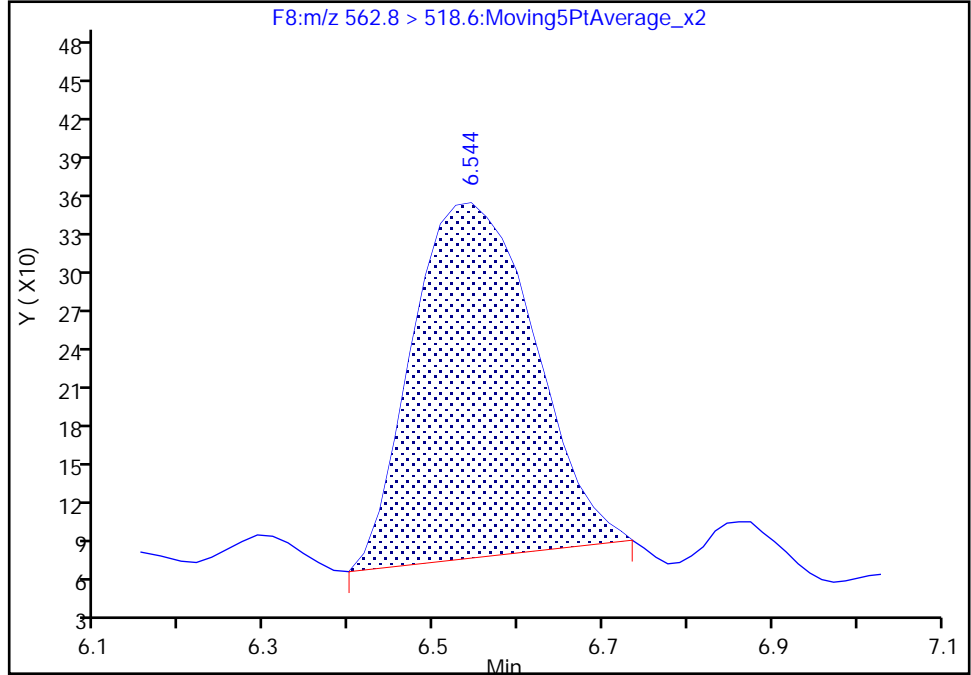
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

33 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

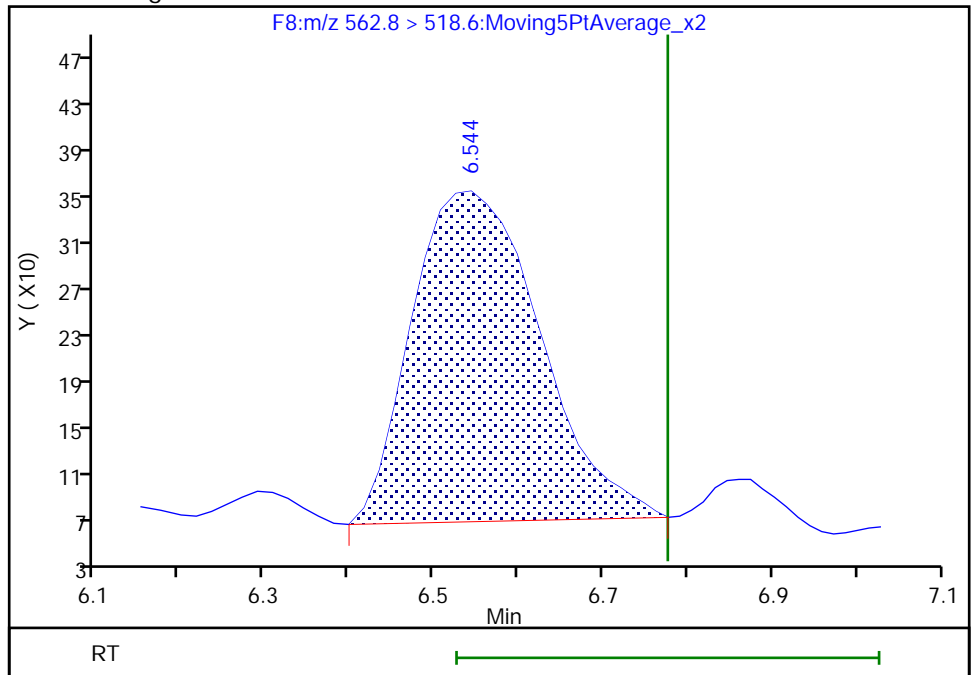
RT: 6.54
Area: 2723
Amount: 0.208533
Amount Units: ng/ml

Processing Integration Results



RT: 6.54
Area: 2933
Amount: 0.224615
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:46:41
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

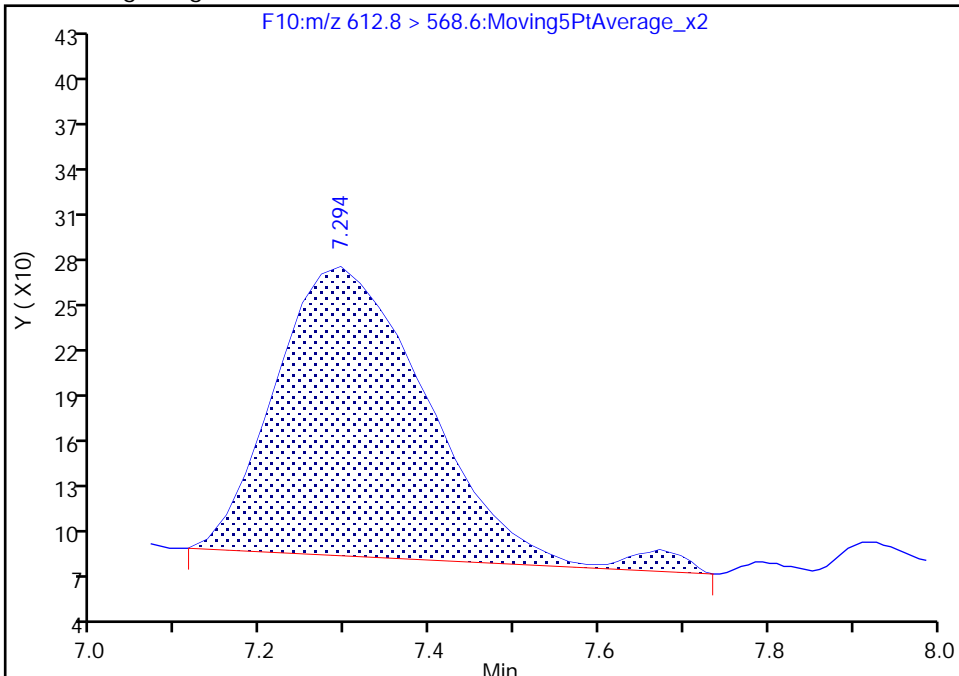
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

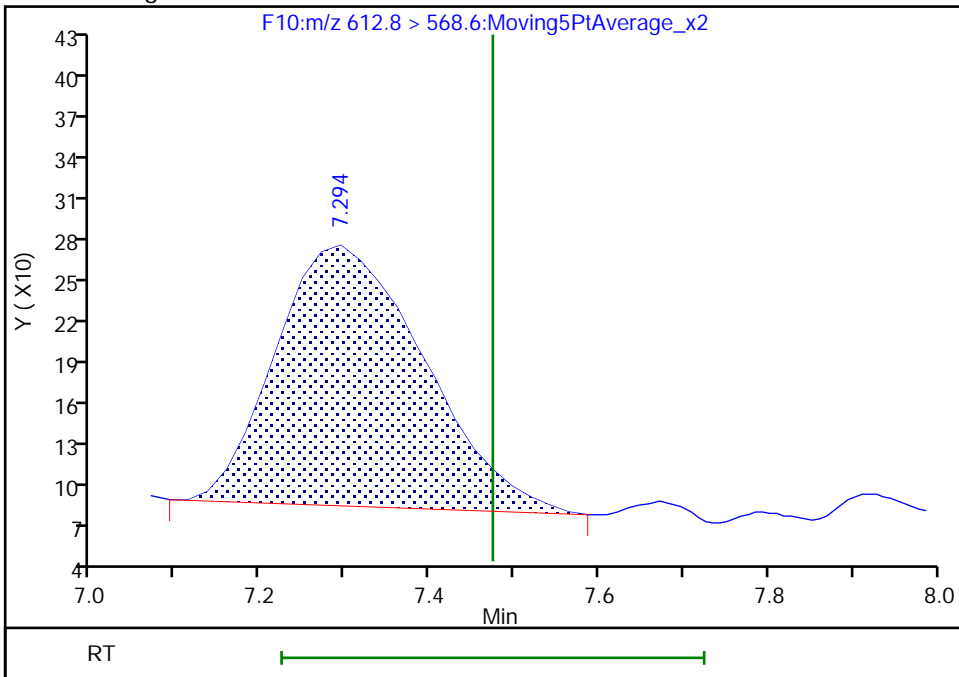
RT: 7.29
Area: 2410
Amount: 0.189933
Amount Units: ng/ml

Processing Integration Results



RT: 7.29
Area: 2324
Amount: 0.183155
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:46:48
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

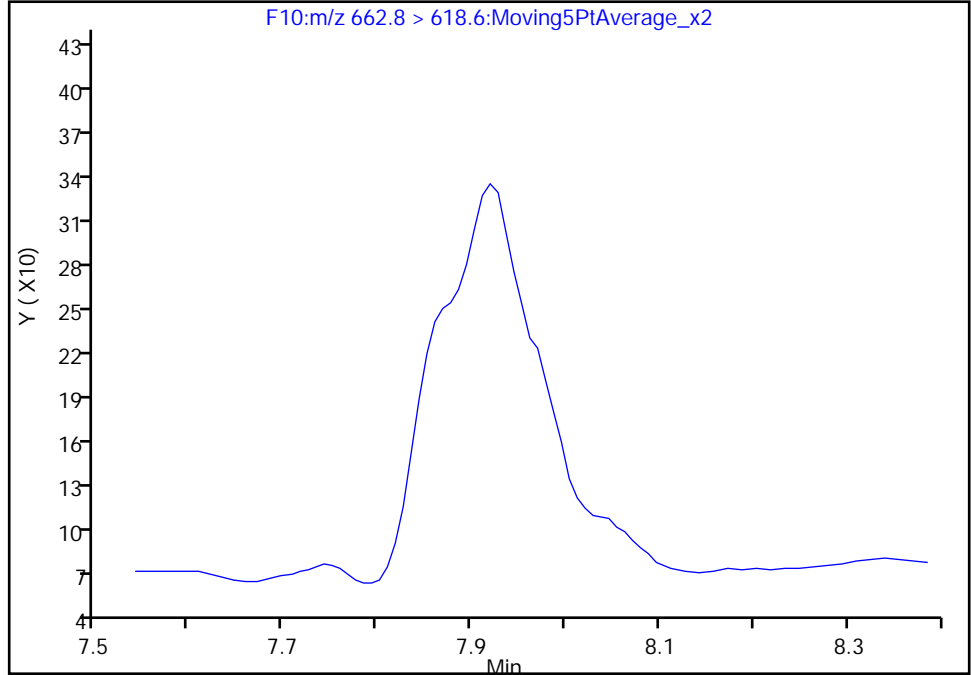
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:M/RM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

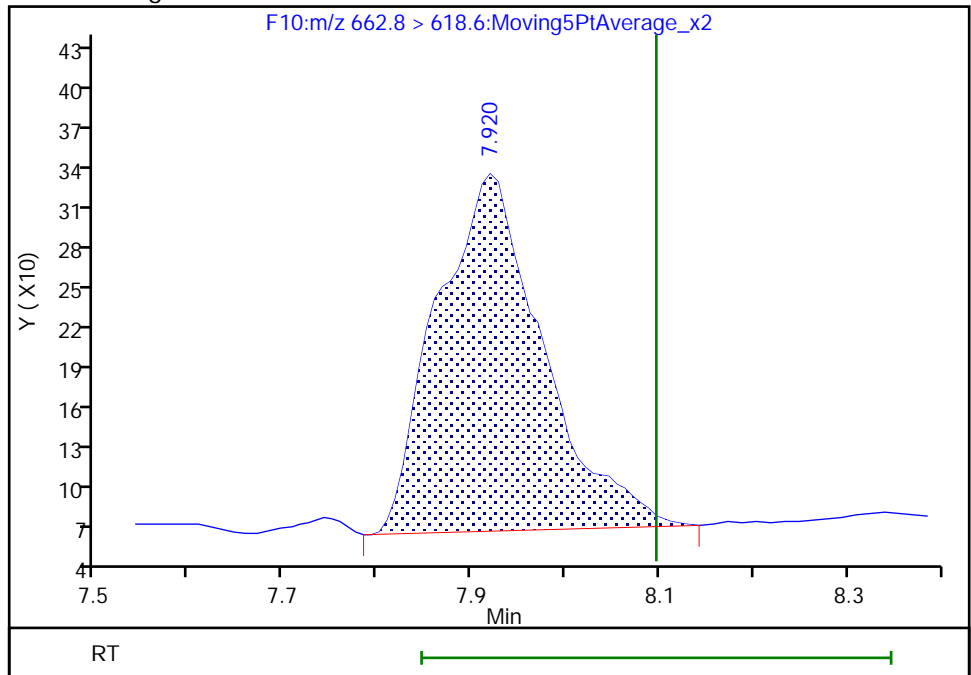
Processing Integration Results

Not Detected
Expected RT: 8.10



Manual Integration Results

RT: 7.92
Area: 2106
Amount: 0.152328
Amount Units: ng/ml



TestAmerica Burlington

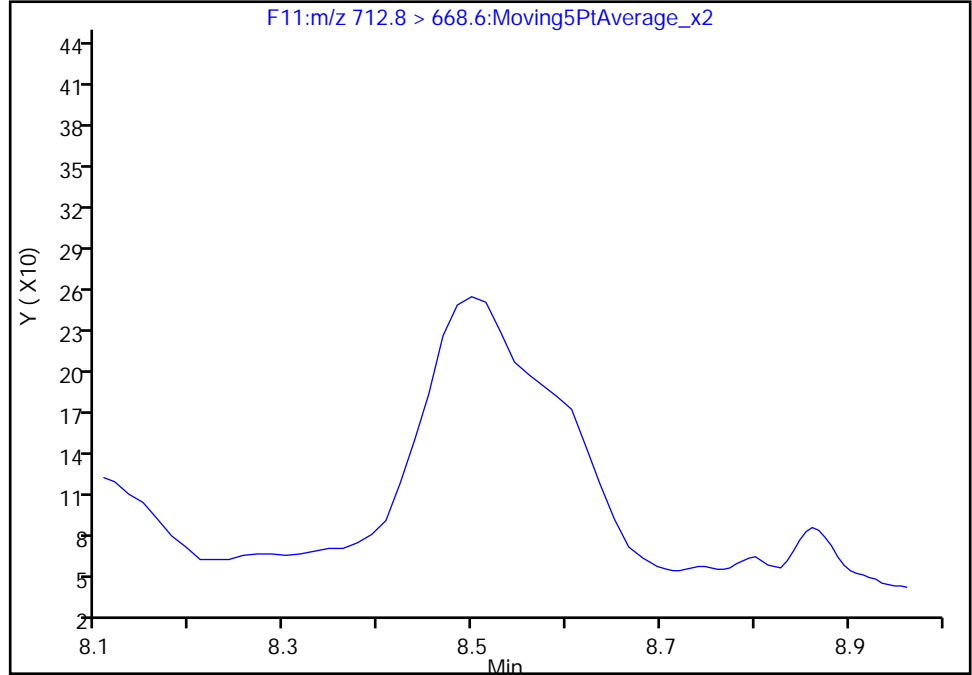
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

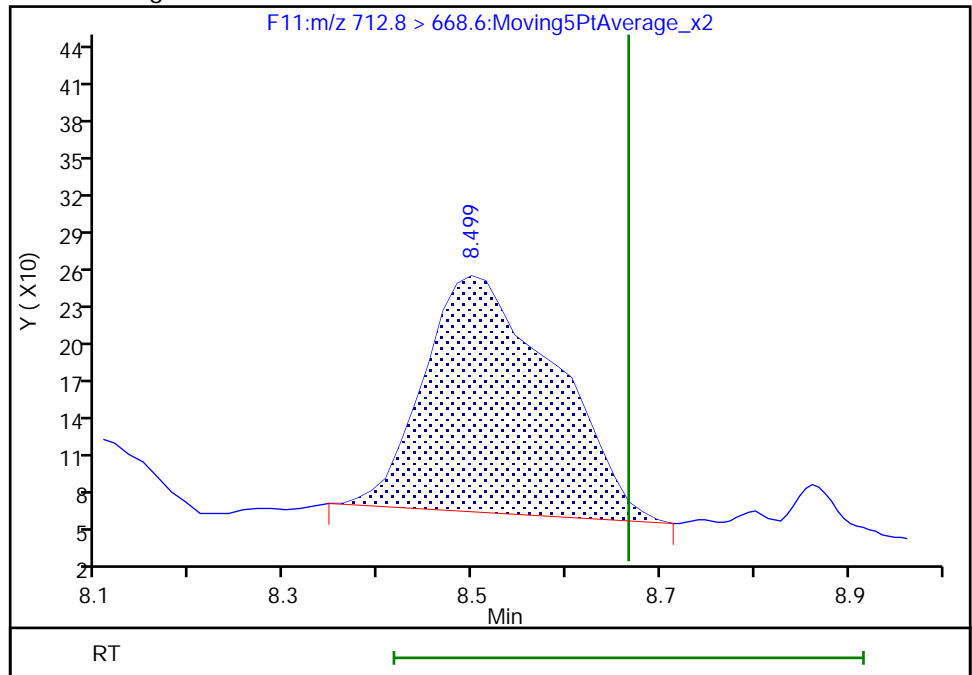
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.50
Area: 1826
Amount: 0.132440
Amount Units: ng/ml



TestAmerica Burlington

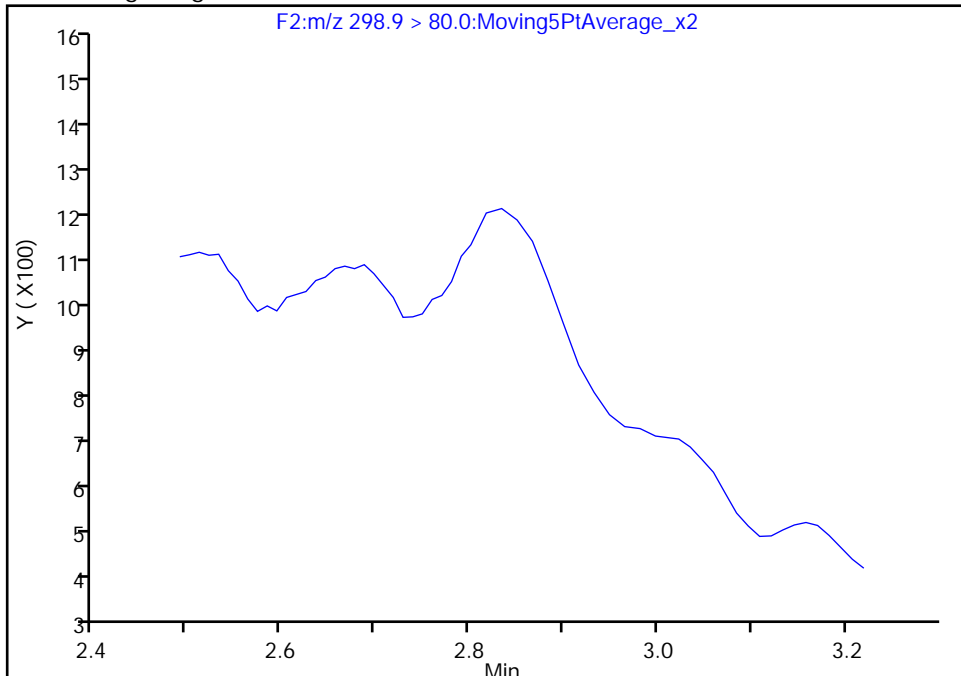
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

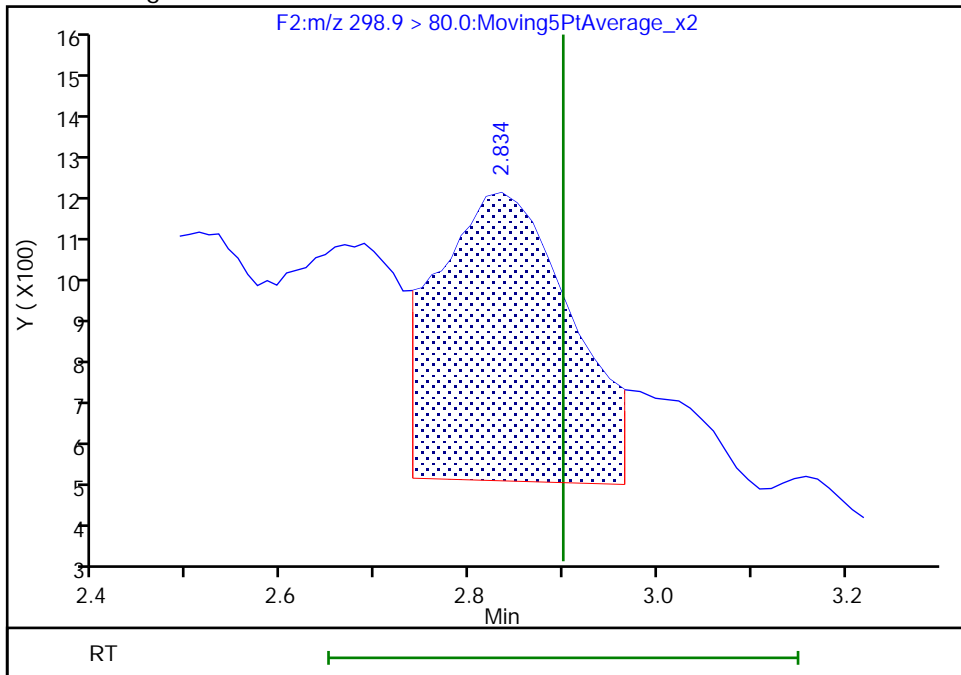
Not Detected
Expected RT: 2.90

Processing Integration Results



RT: 2.83
Area: 6319
Amount: 1.981801
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:48:34
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

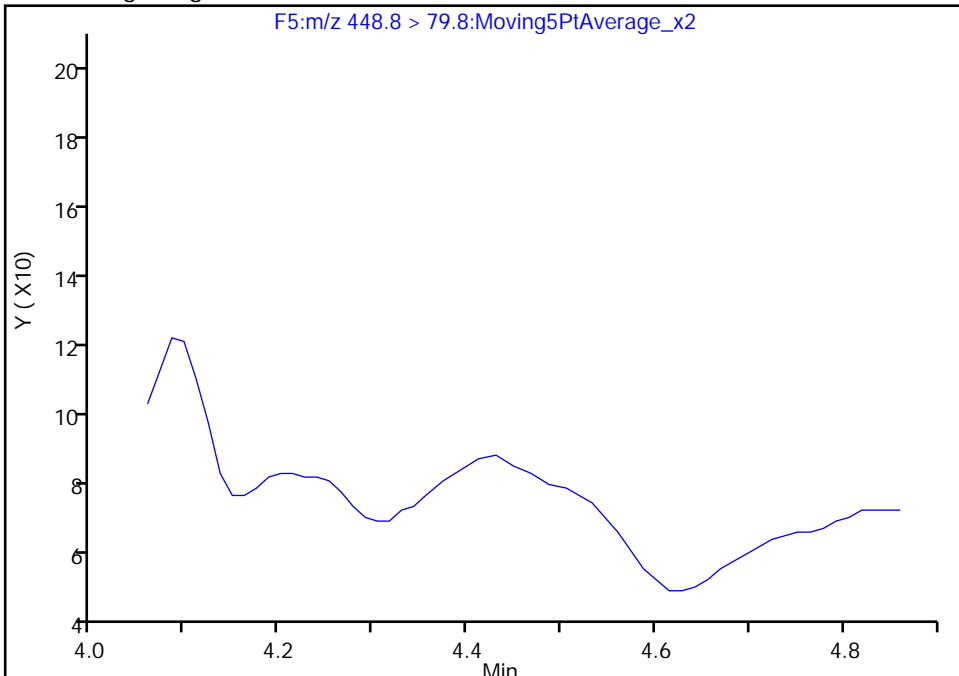
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

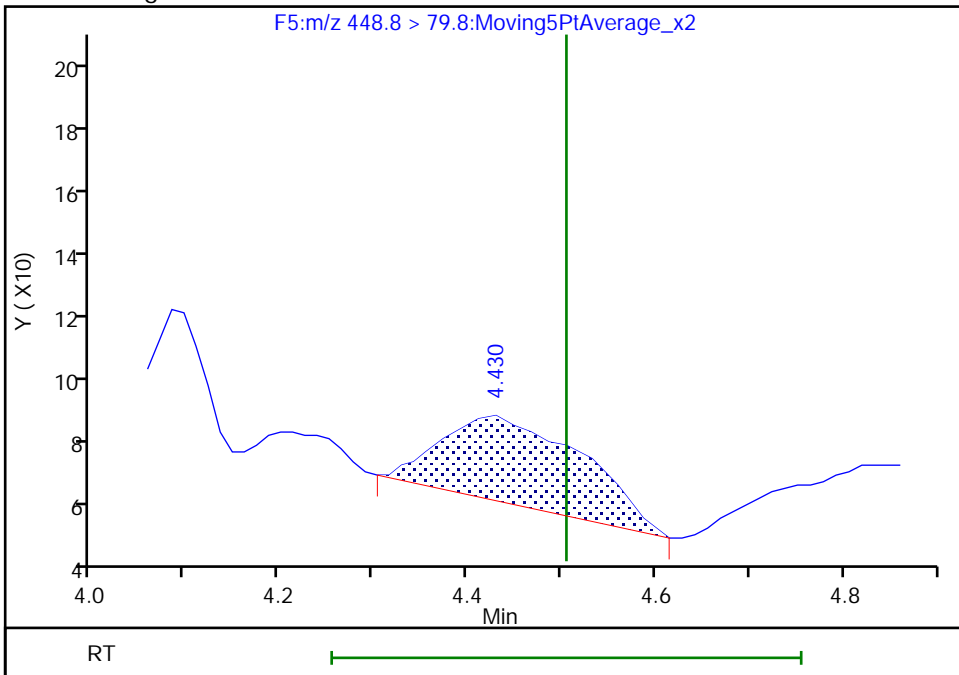
Not Detected
Expected RT: 4.51

Processing Integration Results



Manual Integration Results

RT: 4.43
Area: 278
Amount: 0.100689
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:48:11
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

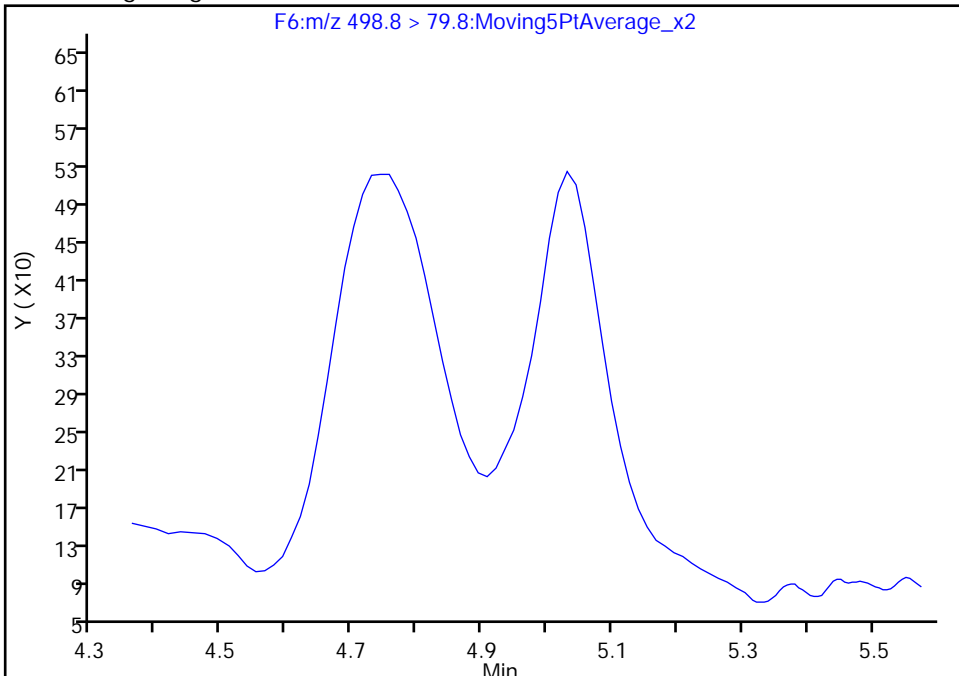
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

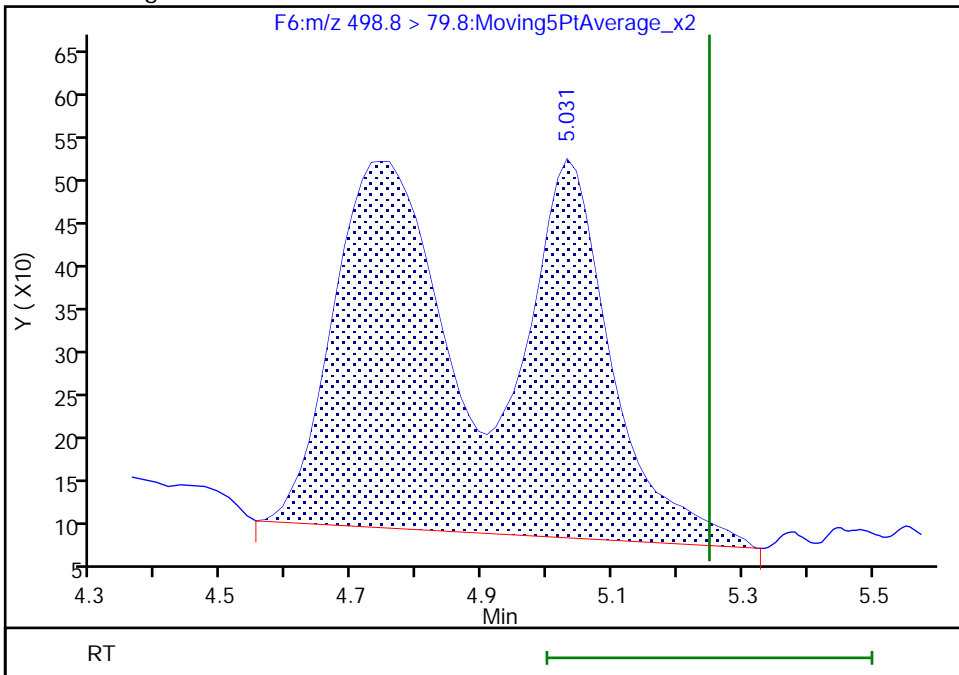
Not Detected
Expected RT: 5.25

Processing Integration Results



RT: 5.03
Area: 8802
Amount: 2.944418
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:47:47
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

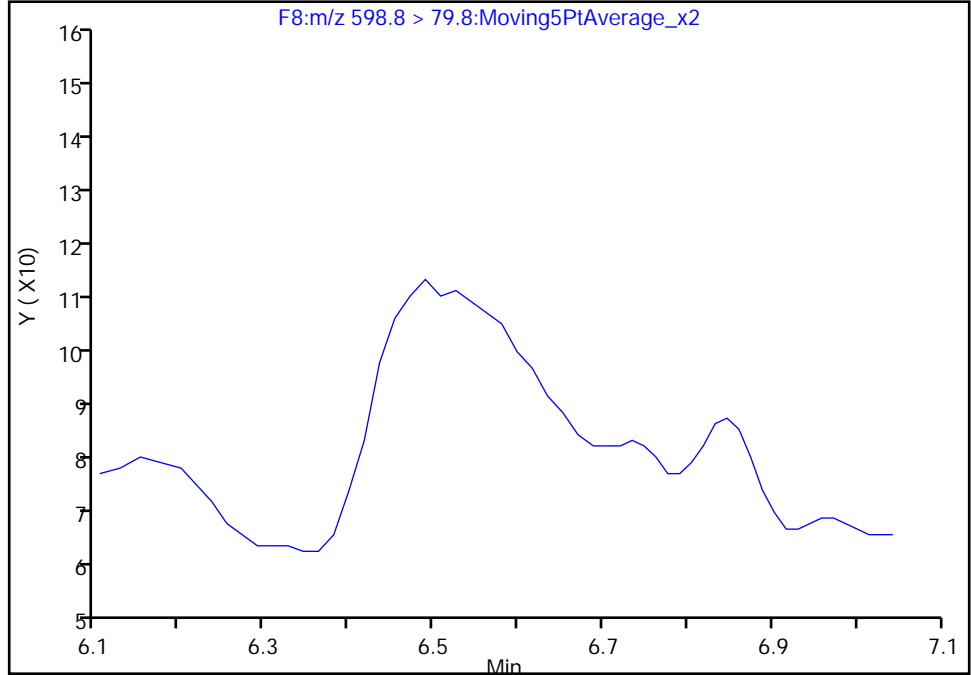
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

31 Perfluorodecanesulfonic acid, CAS: 335-77-3

Signal: 1

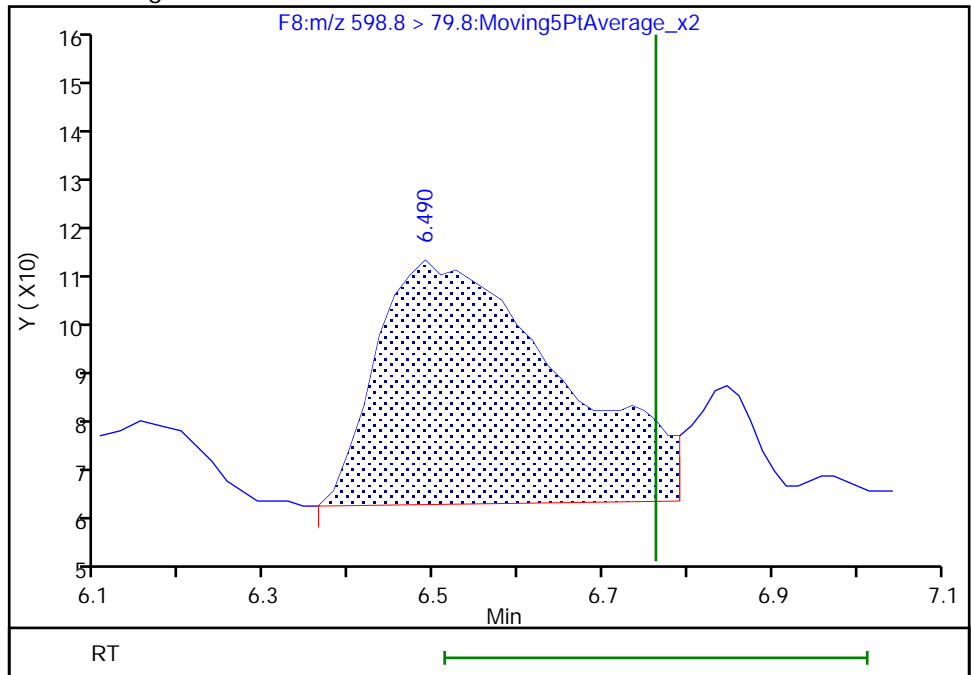
Not Detected
Expected RT: 6.76

Processing Integration Results



Manual Integration Results

RT: 6.49
Area: 724
Amount: 0.239321
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:47:32

Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak

TestAmerica Burlington

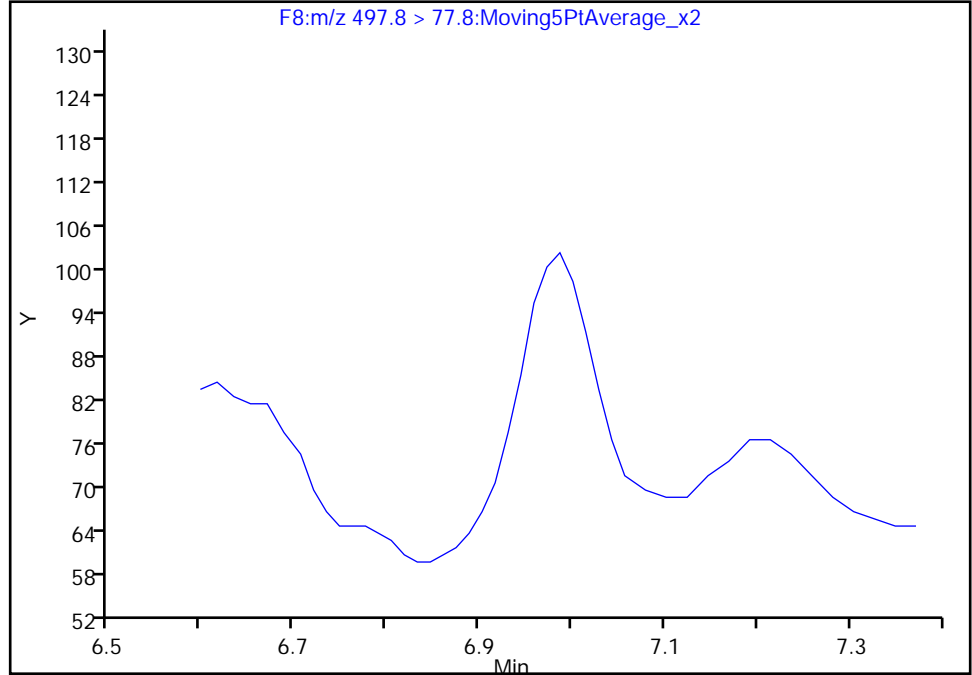
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

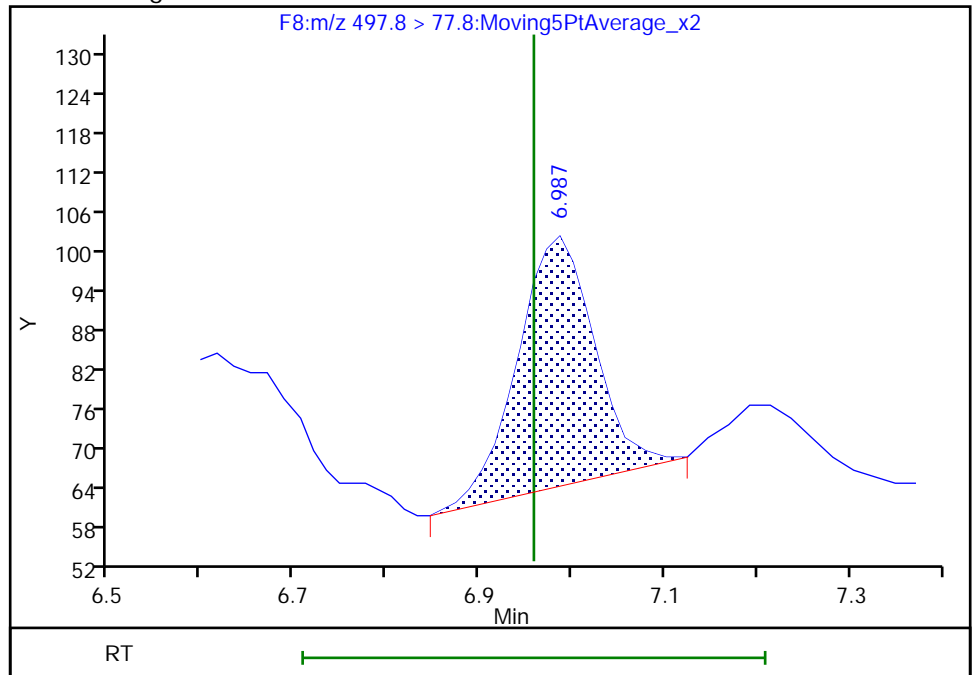
Not Detected
Expected RT: 6.96

Processing Integration Results



Manual Integration Results

RT: 6.99
Area: 222
Amount: 0.067999
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:47:08
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

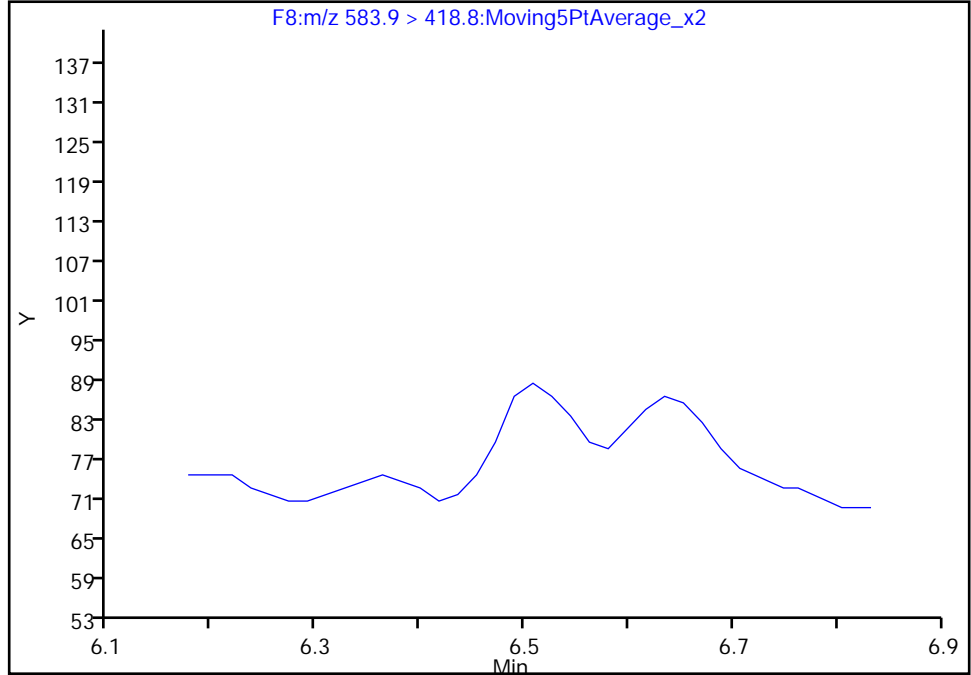
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

30 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

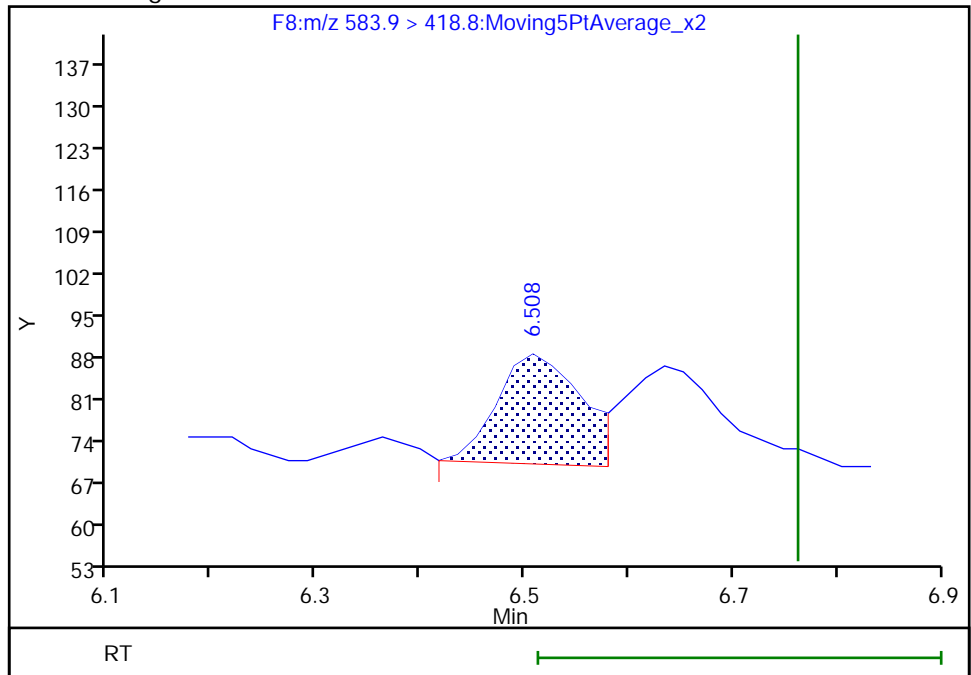
Not Detected
Expected RT: 6.76

Processing Integration Results



Manual Integration Results

RT: 6.51
Area: 102
Amount: 0.043479
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:47:18
Audit Action: Split an Integrated Peak

Audit Reason: Missed Peak
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TestAmerica Burlington

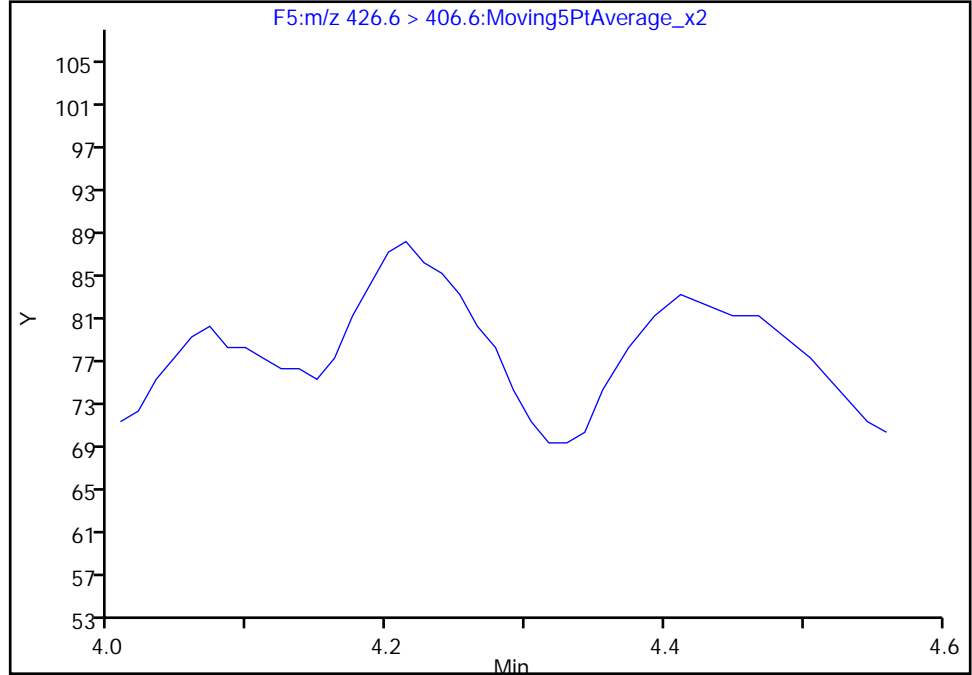
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

14 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

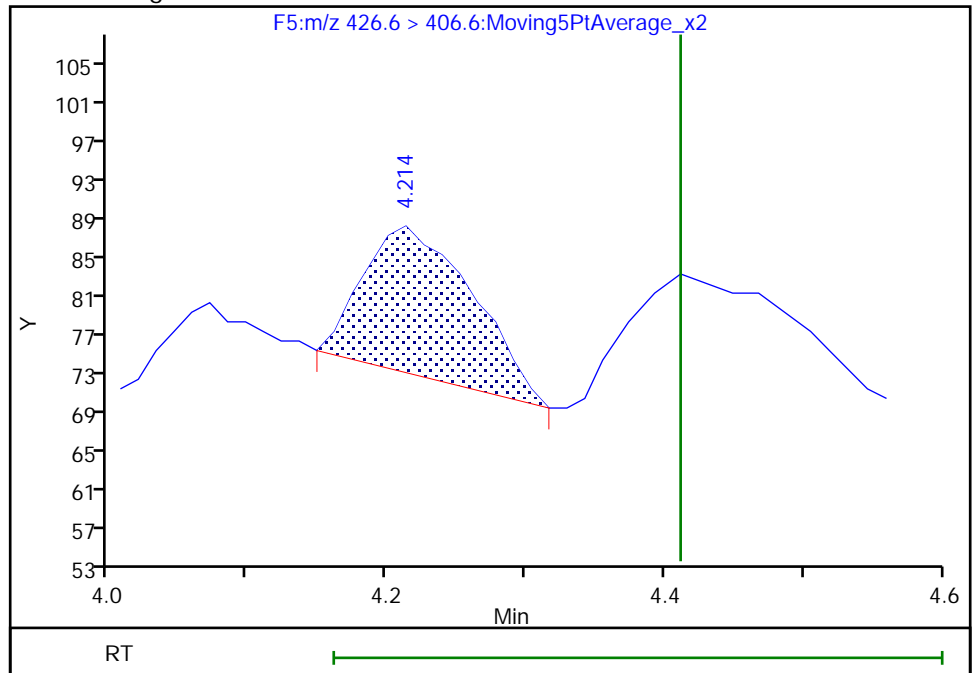
Not Detected
Expected RT: 4.41

Processing Integration Results



RT: 4.21
Area: 84
Amount: 0.035379
Amount Units: ng/ml

Manual Integration Results



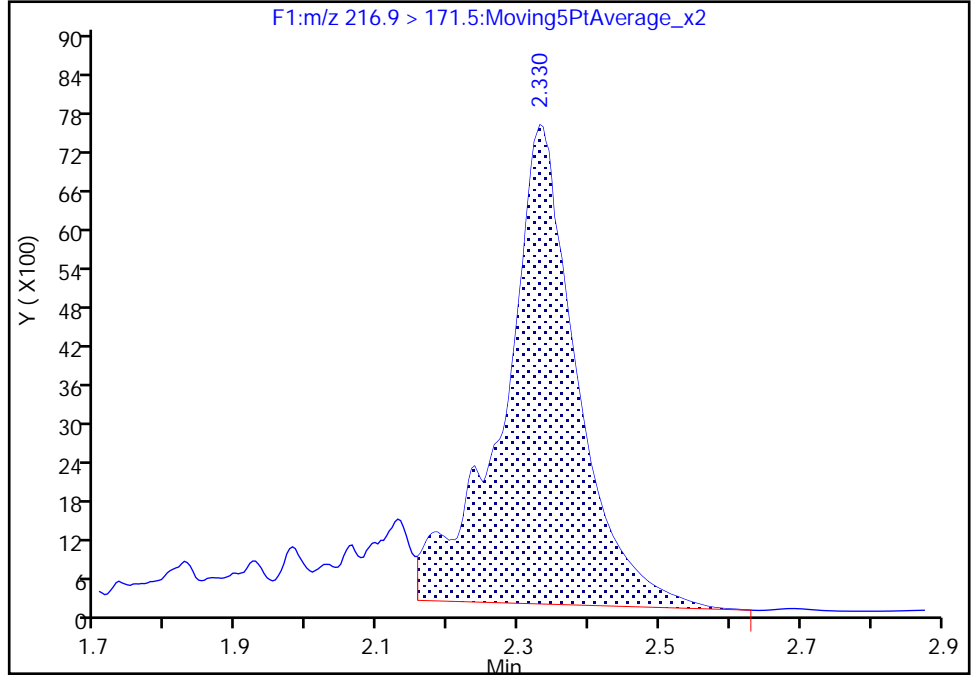
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

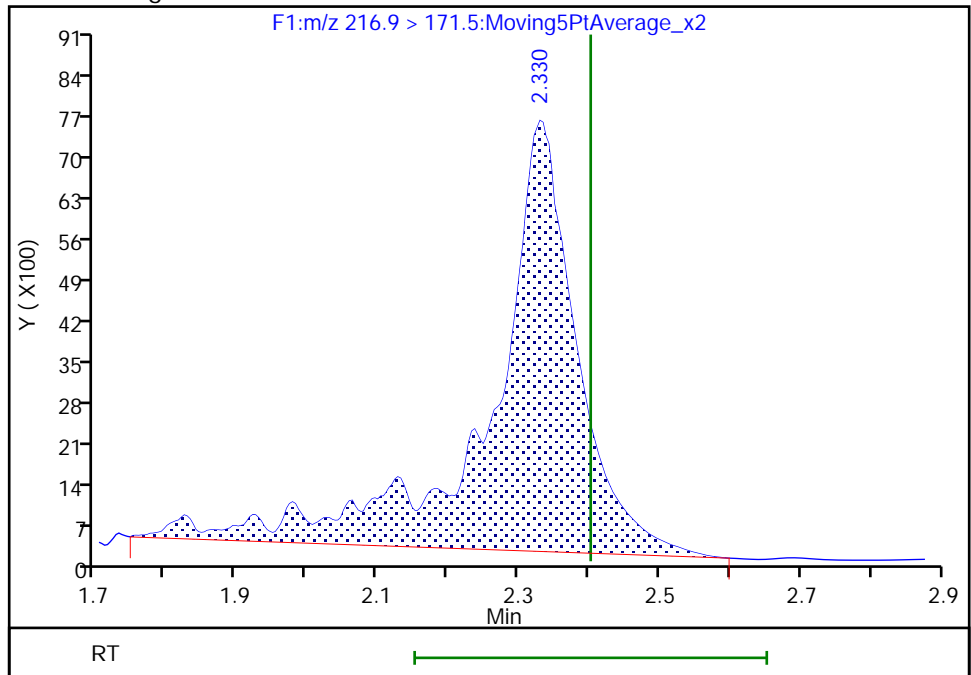
RT: 2.33
Area: 54114
Amount: 23.863614
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 63556
Amount: 12.331855
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:08
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

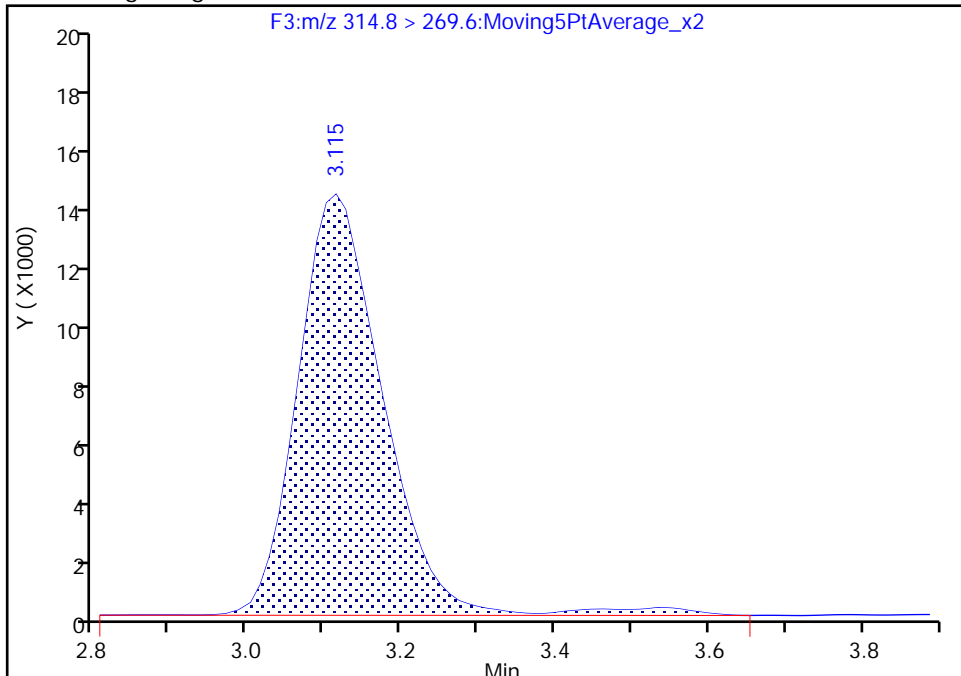
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

D 7 13C2 PFHxA, CAS: STL00993

Signal: 1

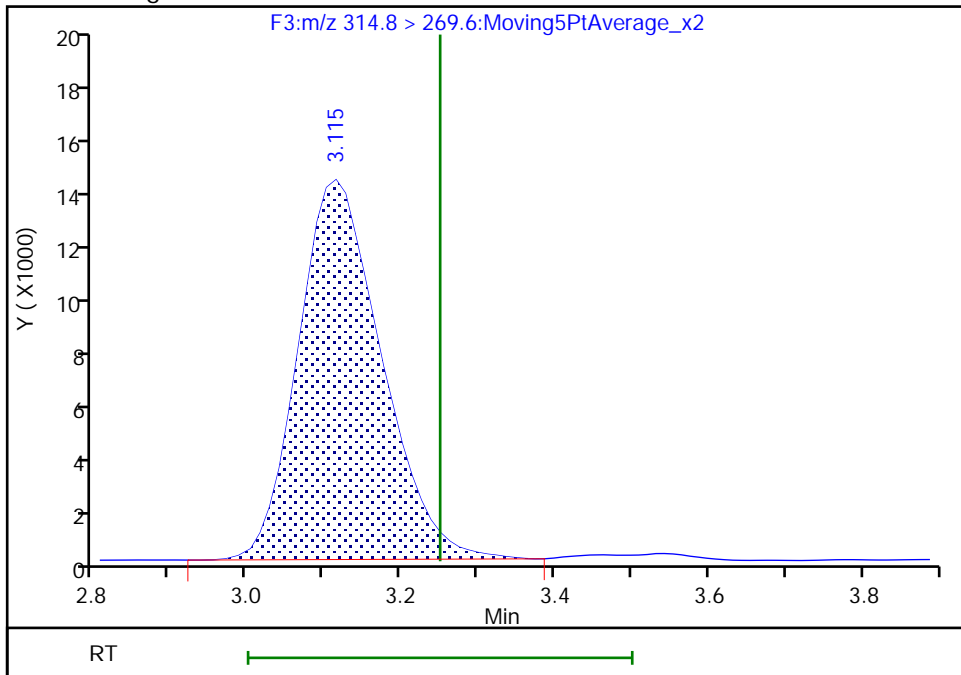
RT: 3.12
Area: 106027
Amount: 40.937006
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 102853
Amount: 17.472774
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:44
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

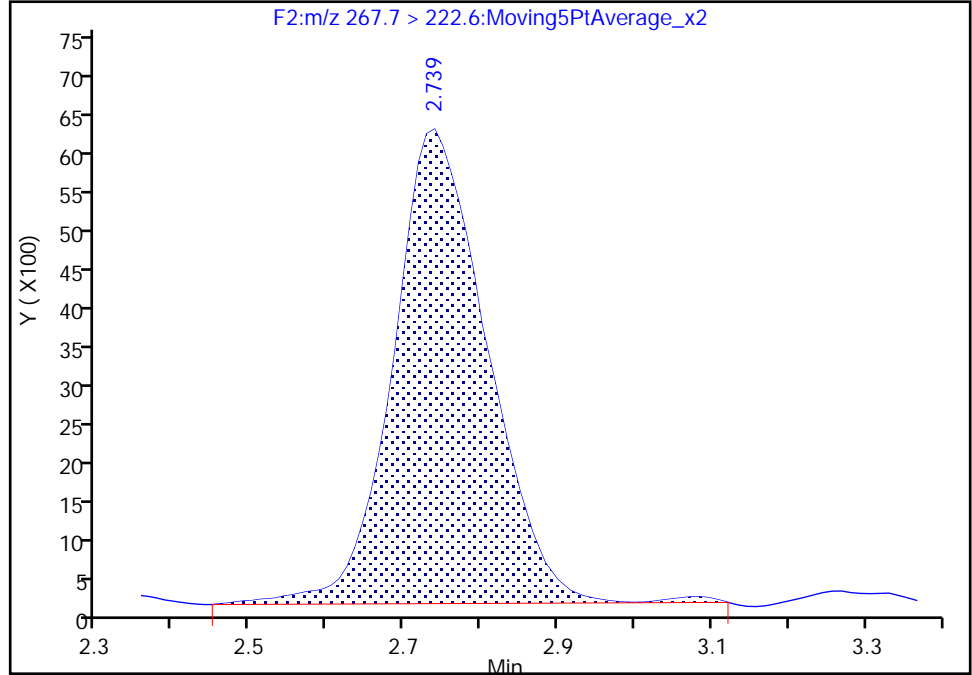
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 3 13C5 PFPeA, CAS: STL01893

Signal: 1

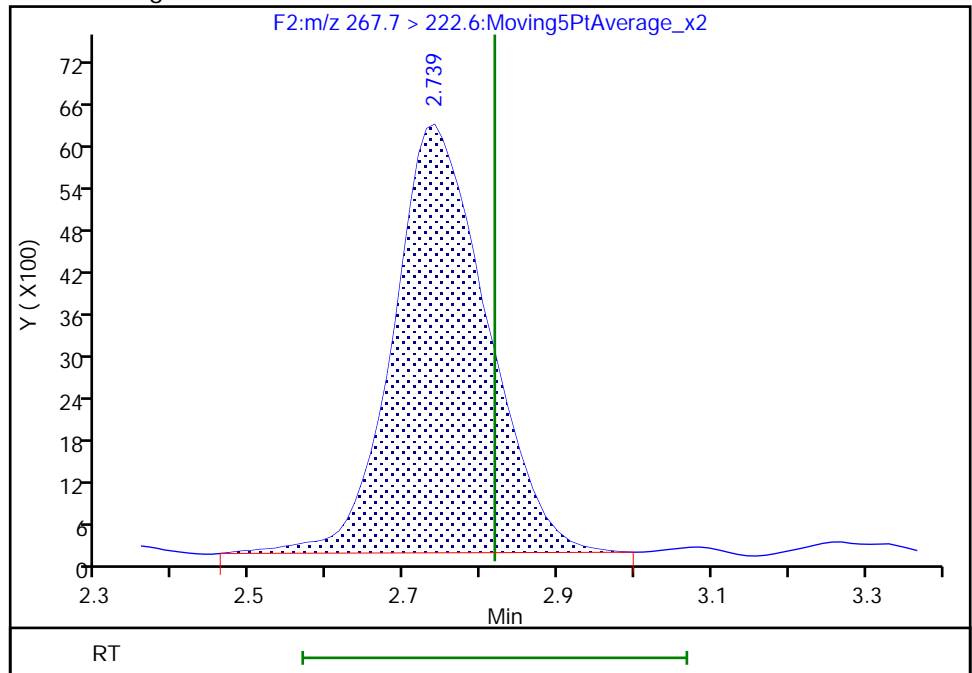
RT: 2.74
Area: 52497
Amount: 36.517766
Amount Units: ng/ml

Processing Integration Results



RT: 2.74
Area: 51957
Amount: 15.902268
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:19
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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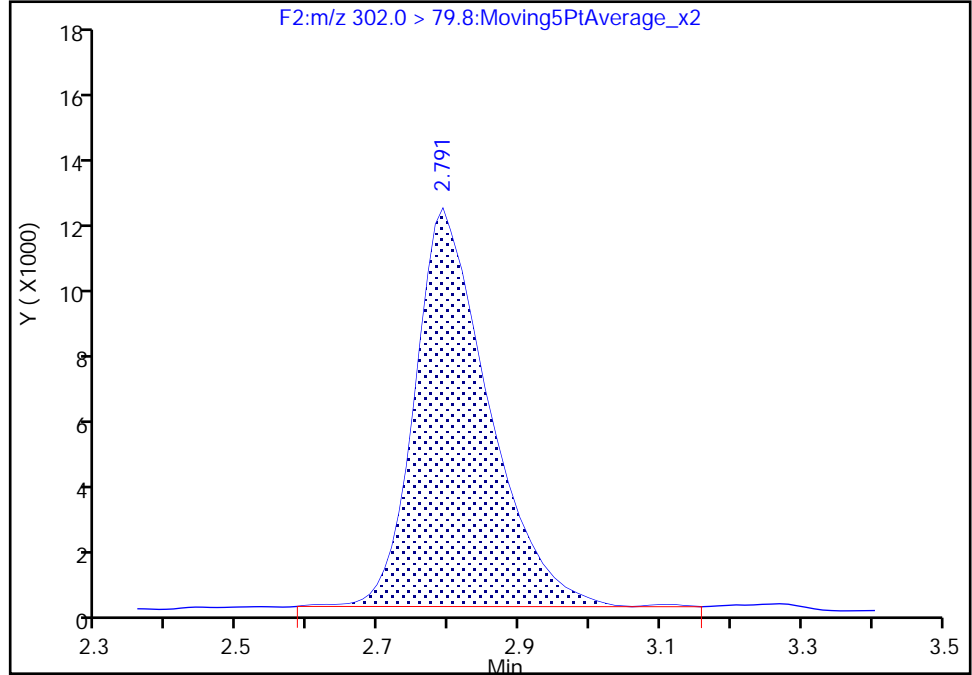
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A73.d
Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 6 13C3 PFBS, CAS: STL02337
Signal: 1

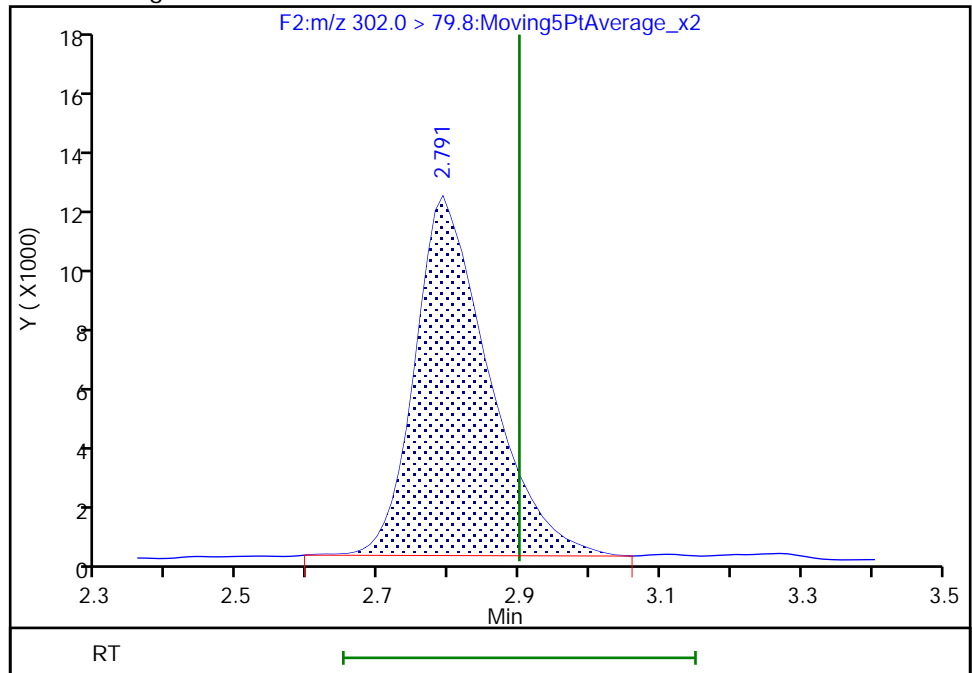
RT: 2.79
Area: 85488
Amount: 72.038284
Amount Units: ng/ml

Processing Integration Results



RT: 2.79
Area: 84965
Amount: 31.502394
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:45:40
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

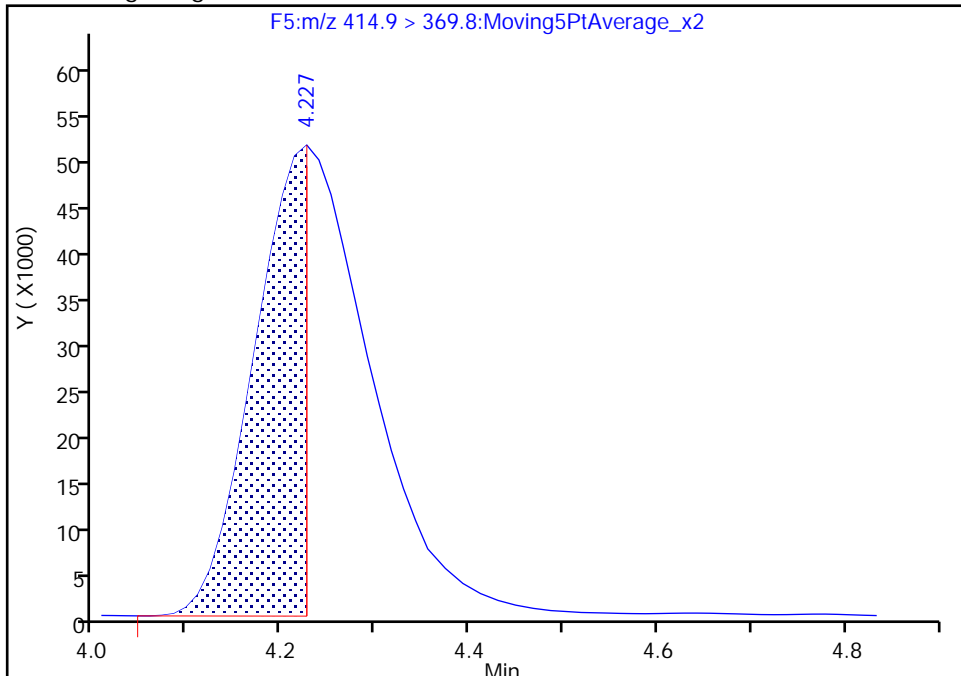
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Injection Date: 08-Jan-2019 12:17:26 Instrument ID: LC410
Lims ID: 480-147040-A-4-A Lab Sample ID: 200-147040-4
Client ID: MW-10-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 73
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

* 15 13C2 PFOA, CAS: STL00623

Signal: 1

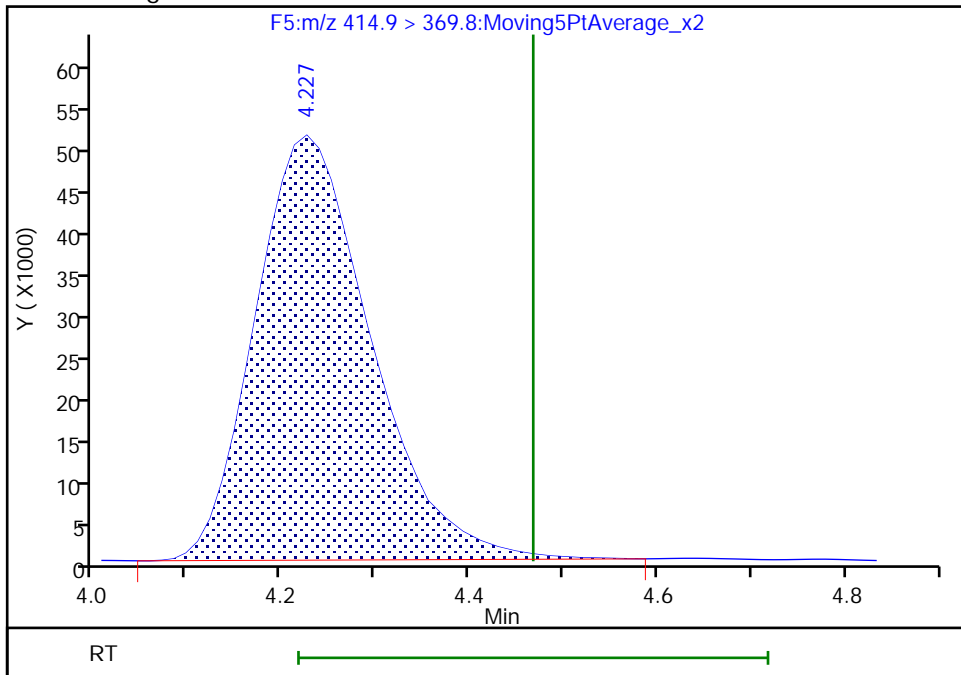
RT: 4.23
Area: 192986
Amount: 50.000000
Amount Units: ng/ml

Processing Integration Results



RT: 4.23
Area: 438612
Amount: 50.000000
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:46:22
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-01R-121918 Lab Sample ID: 480-147040-5
 Matrix: Water Lab File ID: PF010719A74.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 14:10
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 305.4 (mL) Date Analyzed: 01/08/2019 12:33
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	10		1.6	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	11		1.6	0.61
307-24-4	Perfluorohexanoic acid (PFHxA)	11		1.6	0.20
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.1		1.6	0.26
335-67-1	Perfluorooctanoic acid (PFOA)	5.6	B	1.6	0.26
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.6	0.31
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.6	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.29	J B	1.6	0.20
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.6	0.29
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.6	0.20
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.6	0.37
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8		1.6	0.36
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.49	J	1.6	0.21
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.6	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.6		1.6	0.62
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.6	0.43
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.6	0.46
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		16	0.37
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		16	0.57
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		16	0.82
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		16	0.46

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-01R-121918 Lab Sample ID: 480-147040-5
 Matrix: Water Lab File ID: PF010719A74.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 14:10
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 305.4 (mL) Date Analyzed: 01/08/2019 12:33
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	102		50-150
STL01892	13C4 PFHpA	66		50-150
STL00990	13C4 PFOA	70		50-150
STL00991	13C4 PFOS	94		50-150
STL00995	13C5 PFNA	76		50-150
STL00992	13C4 PFBA	78		25-150
STL00993	13C2 PFHxA	60		50-150
STL00996	13C2 PFDA	72		50-150
STL00997	13C2 PFUnA	73		50-150
STL00998	13C2 PFDoA	64		50-150
STL01056	13C8 FOSA	63		25-150
STL01893	13C5 PFPeA	70		25-150
STL02116	13C2 PFTeDA	64		50-150
STL02118	d3-NMeFOSAA	53		50-150
STL02117	d5-NEtFOSAA	62		50-150
STL02279	M2-6:2 FTS	142		25-150
STL02280	M2-8:2 FTS	95		25-150
STL02337	13C3 PFBS	94		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
 Lims ID: 480-147040-A-5-A
 Client ID: MW-01R-121918
 Sample Type: Client
 Inject. Date: 08-Jan-2019 12:33:25 ALS Bottle#: 0 Worklist Smp#: 74
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-074 5
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:35:28 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303

First Level Reviewer: chirgwinb Date: 08-Jan-2019 17:52:07
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.382	2.402	-0.020	1.000	252352	38.9	77.9	424	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.382	2.402	-0.020	1.000	26917	6.10		82.1		M
D 3 13C5 PFPeA	267.7 > 222.6	2.801	2.818	-0.017	1.000	143914	35.0	70.1	1122	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.791	2.818	-0.027	0.996	52578	6.41			106	
D 6 13C3 PFBS	302.0 > 79.8	2.867	2.900	-0.033	1.000	148560	43.8	94.2	774	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.867	2.900	-0.033	1.000	6296	1.13			3.1	M
D 7 13C2 PFHxA	314.8 > 269.6	3.214	3.250	-0.036	1.000	223795	30.2	60.5	718	M
8 Perfluorohexanoic acid										
312.8 > 268.6	3.201	3.250	-0.049	0.996	30893	6.65			121	
D 9 13C4 PFHpA	366.9 > 321.8	3.715	3.782	-0.067	1.000	449865	33.2	66.4	427	
10 Perfluoroheptanoic acid										M
362.9 > 318.8	3.726	3.782	-0.056	1.003	16871	1.92			26.9	M
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.759	3.815	-0.056	1.000	3267	0.2992			12.1	M
D 11 18O2 PFHxS	402.9 > 83.8	3.759	3.826	-0.067	1.000	189328	48.3	102	254	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.411	-0.081	1.000	81427	67.3	142	363	
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.374	4.449	-0.075	1.004	24501	3.41			110	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.355	4.468	-0.113	1.000	363061	35.1		70.2	797	
* 15 13C2 PFOA										
414.9 > 369.8	4.355	4.468	-0.113		551538	50.0			638	M
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.374	4.505	-0.131	0.853	173	0.0558			2.0	M
D 20 13C5 PFNA										
467.8 > 422.8	5.113	5.222	-0.109	1.000	530757	38.0		76.0	575	
19 Perfluorononanoic acid										
462.8 > 418.8	5.127	5.222	-0.095	1.003	906	0.0776			4.7	M
D 22 13C4 PFOS										
502.8 > 79.8	5.127	5.236	-0.109	1.000	155307	44.7		93.6	514	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	4.880	5.250	-0.370	0.952	5427	1.62			38.3	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.863	5.998	-0.135	1.000	148366	45.3		94.5	527	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.803	6.022	-0.219	0.986	688	0.0654			4.0	M
D 26 13C2 PFDA										
514.9 > 469.5	5.882	6.022	-0.140	1.000	521429	36.2		72.5	8201	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.241	6.367	-0.126	1.000	49	0.0233			0.4	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.241	6.367	-0.126	1.000	96972	26.4		52.8	496	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.598	6.734	-0.136	1.000	97354	31.2		62.4	795	
D 32 13C2 PFUnA										
564.8 > 519.8	6.634	6.777	-0.143	1.000	544668	36.4		72.7	3052	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.616	6.777	-0.161	0.997	1963	0.1757			14.2	M
D 35 13C8 FOSA										
505.8 > 77.8	6.931	6.945	-0.014	1.000	209474	31.3		62.6	1226	
D 37 13C2 PFDaA										
614.8 > 569.6	7.317	7.474	-0.157	1.000	607192	32.0		64.1	2597	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.474	-0.157	1.000	389	0.0373			3.3	M
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.928	8.097	-0.169	0.935	403	0.0372			4.2	M
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.499	8.666	-0.167	1.002	1403	0.1299	Target=1.00		8.6	M
712.8 > 168.8	8.514	8.666	-0.152	1.004	128		10.96(0.90-1.10)		0.8	M
712.8 > 218.8	8.453	8.666	-0.213	0.996	104		13.49(0.90-1.10)		1.1	M
D 40 13C2 PFTeDA										
714.8 > 669.6	8.484	8.681	-0.197	1.000	554161	31.9		63.7	761	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d

Injection Date: 08-Jan-2019 12:33:25

Instrument ID: LC410

Lims ID: 480-147040-A-5-A

Lab Sample ID: 200-147040-5

Client ID: MW-01R-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 74

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

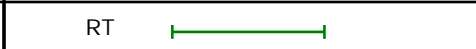
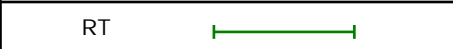
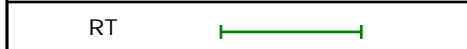
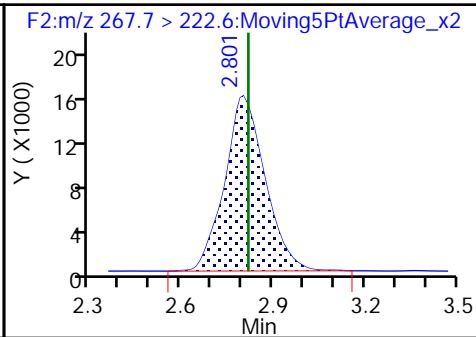
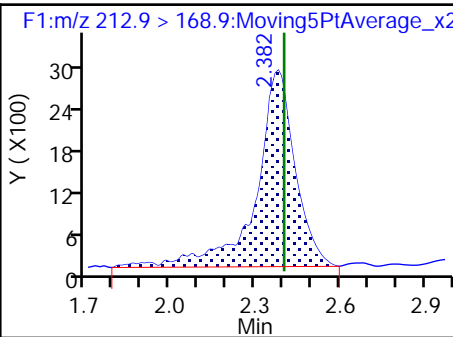
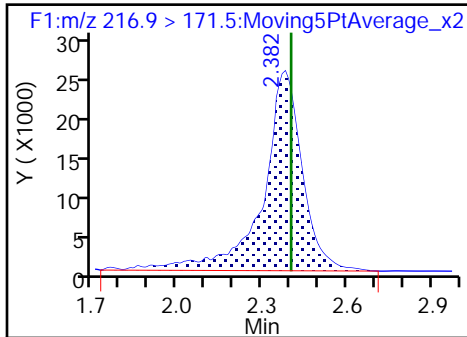
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

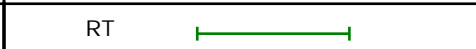
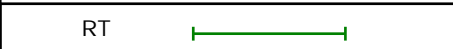
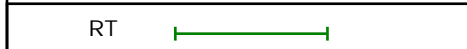
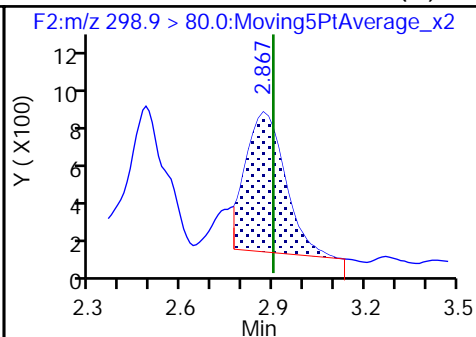
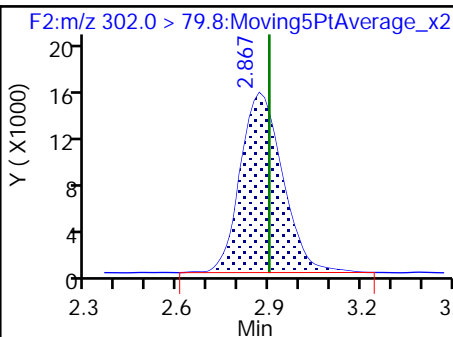
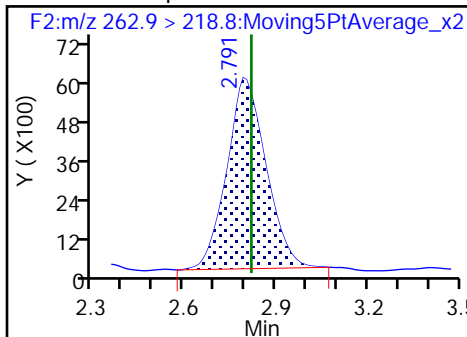
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 6 13C3 PFBS

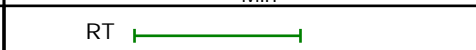
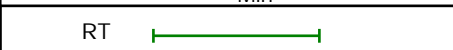
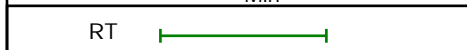
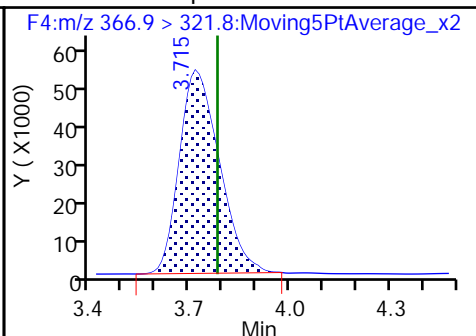
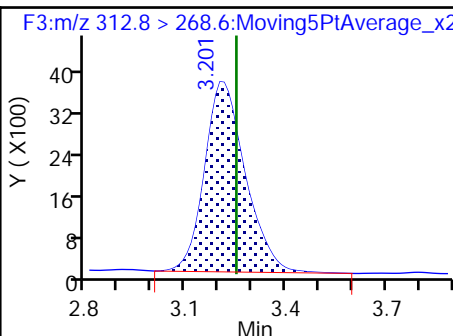
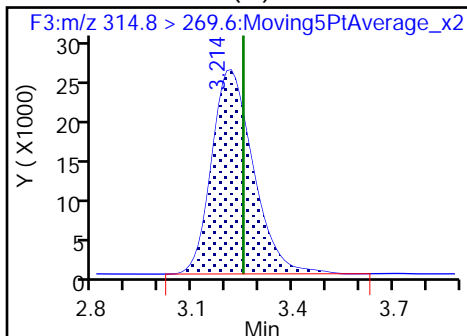
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA (M)

8 Perfluorohexanoic acid

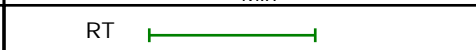
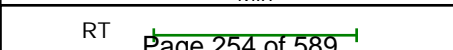
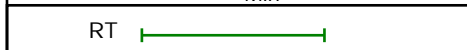
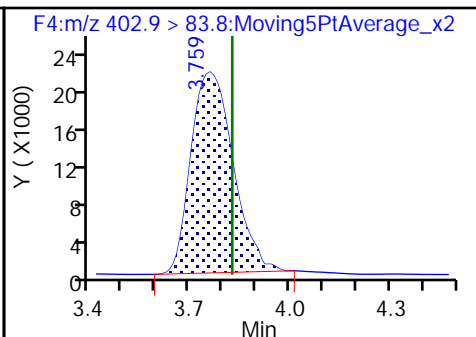
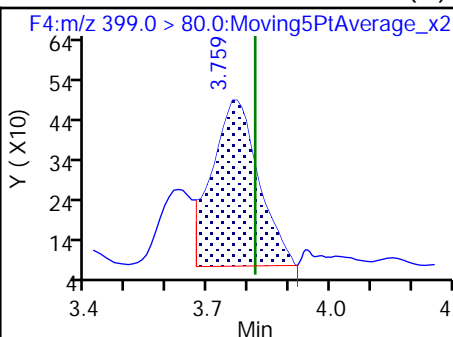
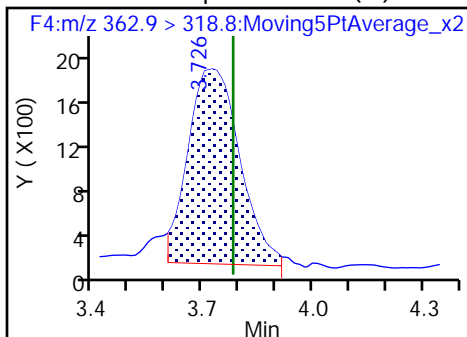
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

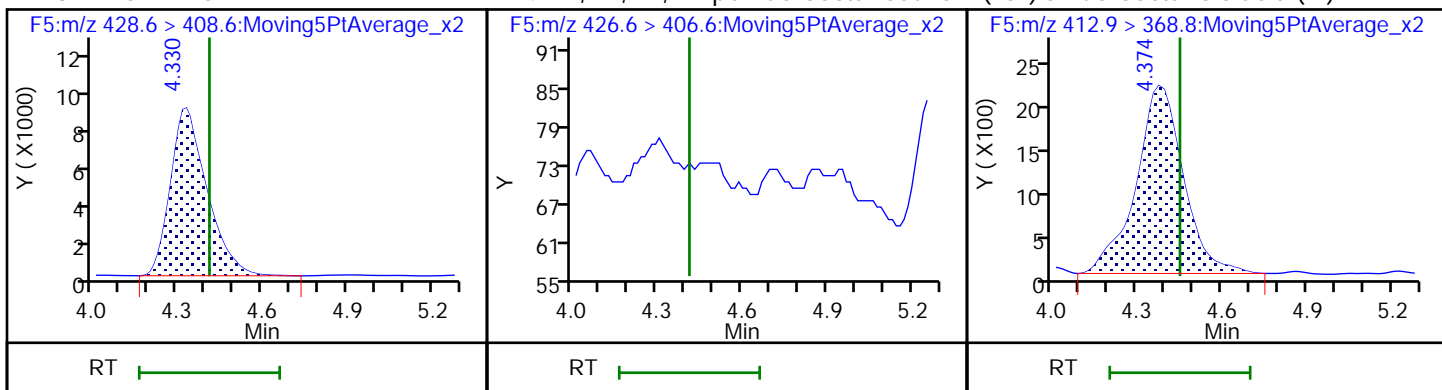
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

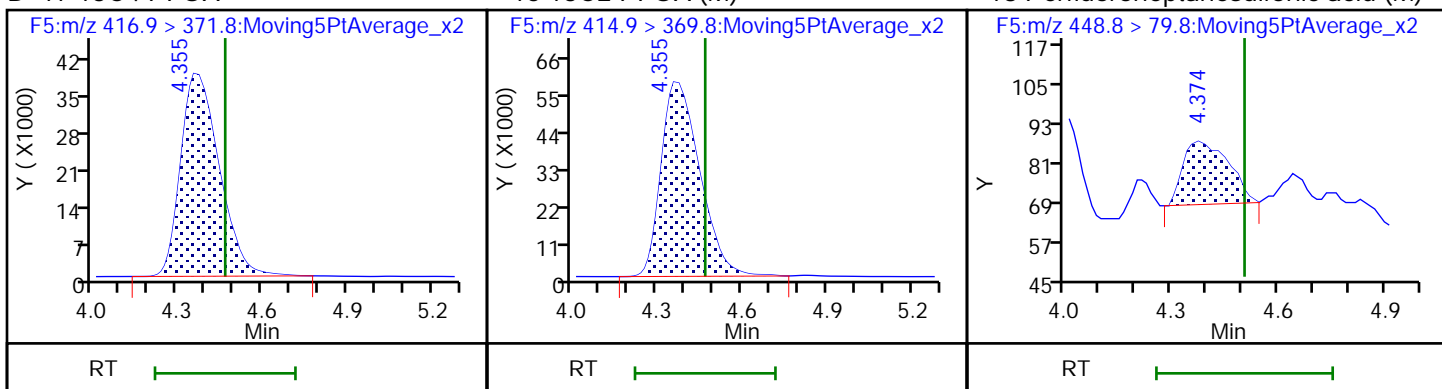
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA (M)

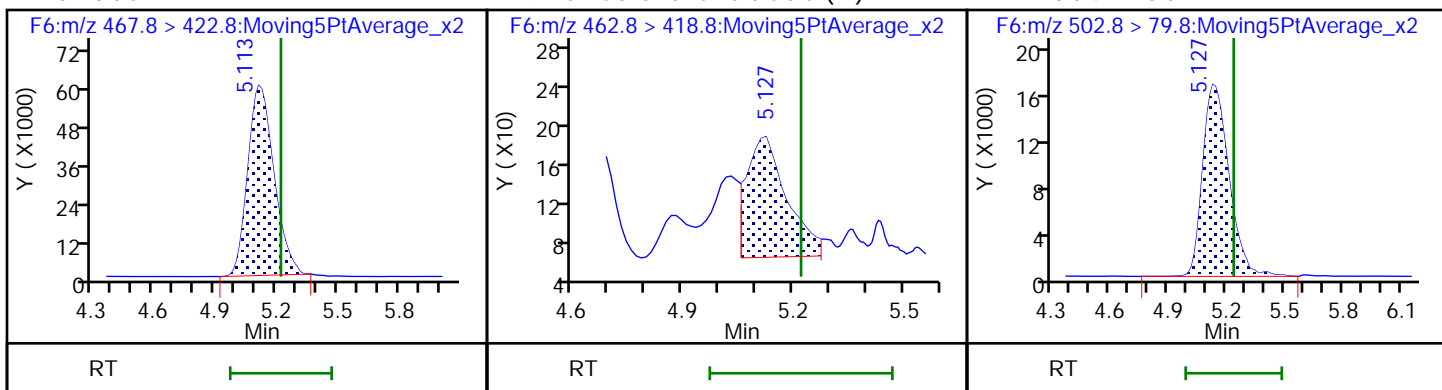
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

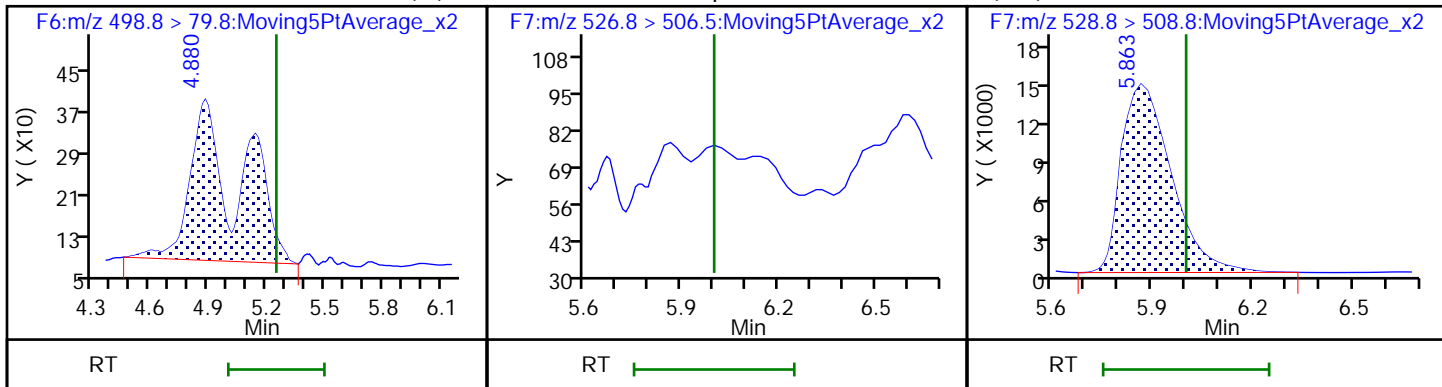
19 Perfluorononanoic acid (M)

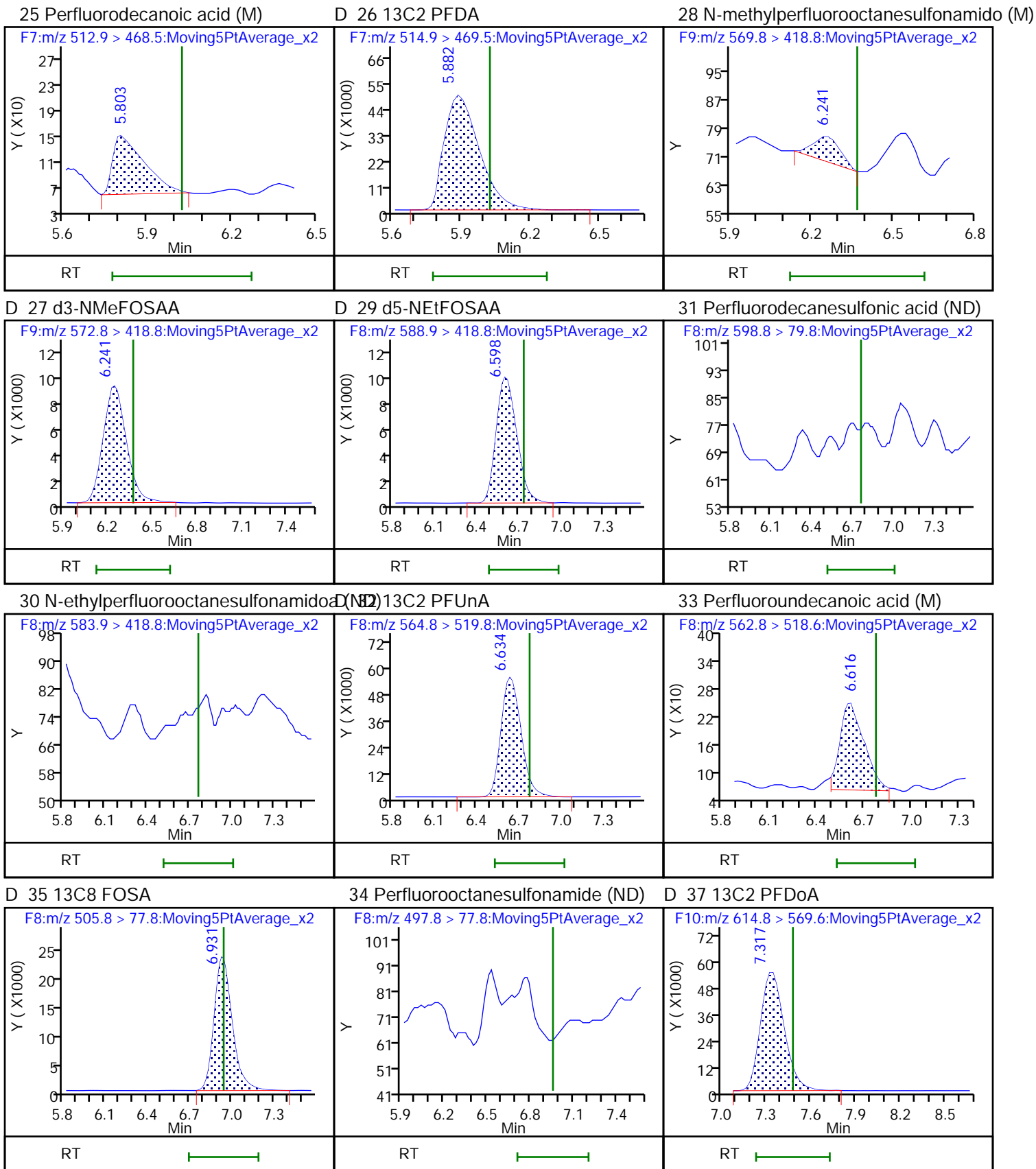
D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfoni (M) M2-8:2 FTS

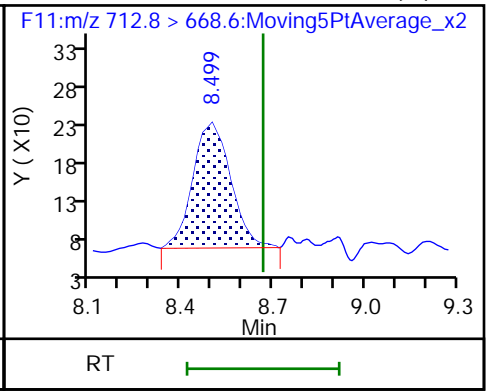
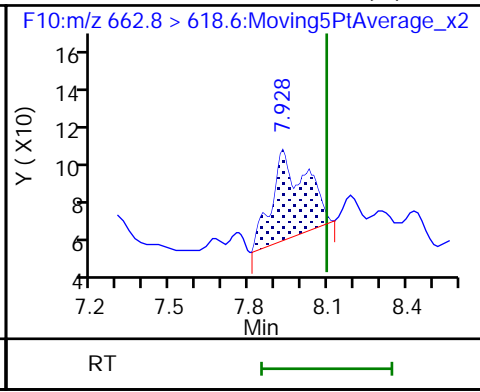
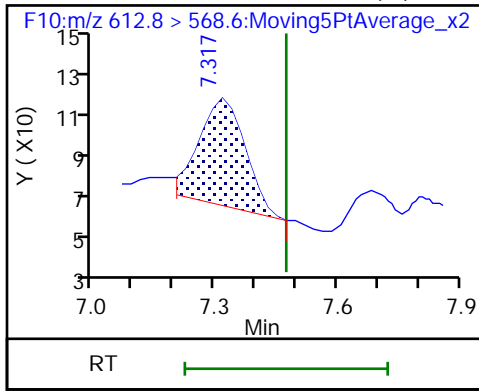




36 Perfluorododecanoic acid (M)

38 Perfluorotridecanoic acid (M)

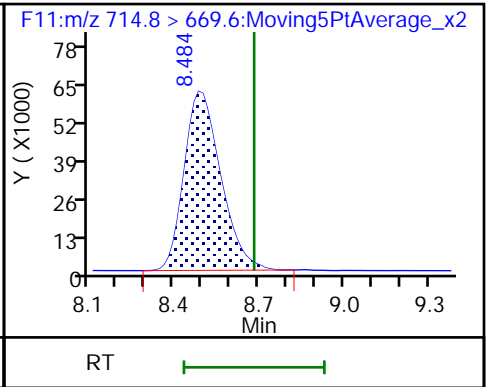
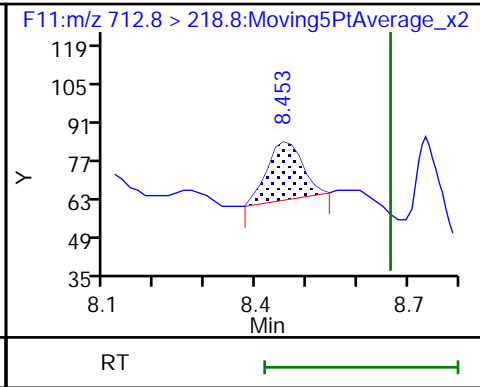
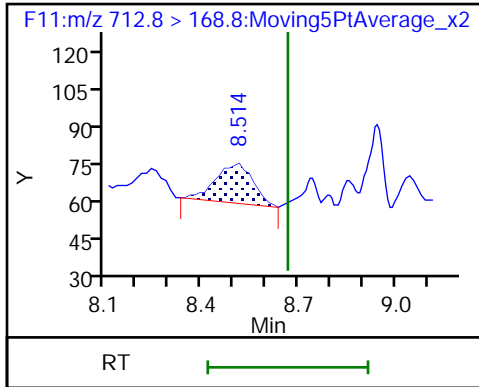
39 Perfluorotetradecanoic acid (M)



39 Perfluorotetradecanoic acid (M)

39 Perfluorotetradecanoic acid (M)

D 40 13C2 PFTeDA



TestAmerica Burlington

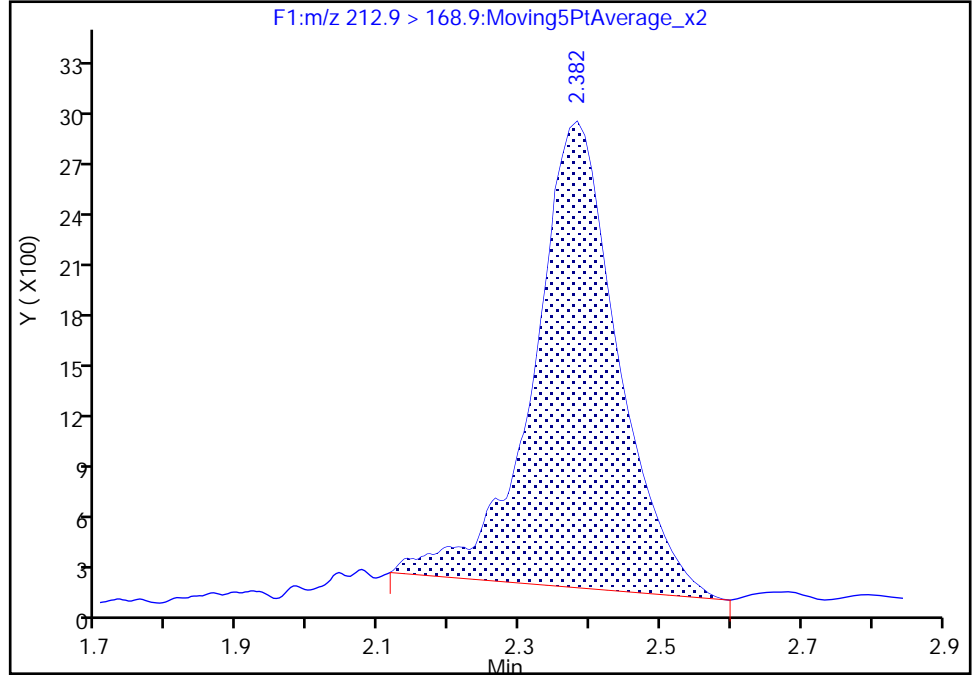
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

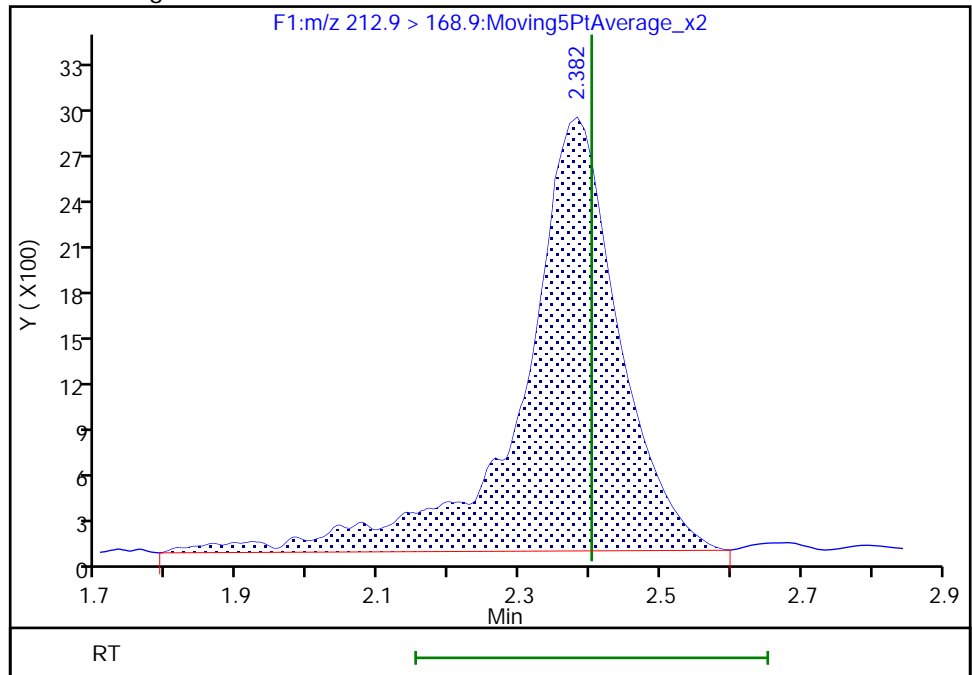
RT: 2.38
Area: 22822
Amount: 5.146576
Amount Units: ng/ml

Processing Integration Results



RT: 2.38
Area: 26917
Amount: 6.104206
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:49:05
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

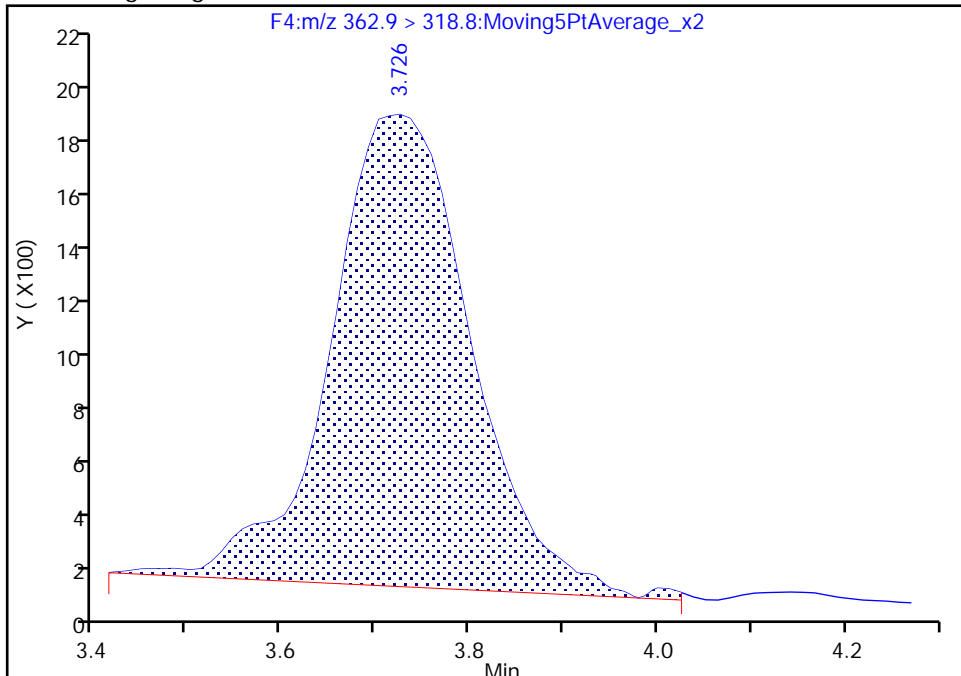
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

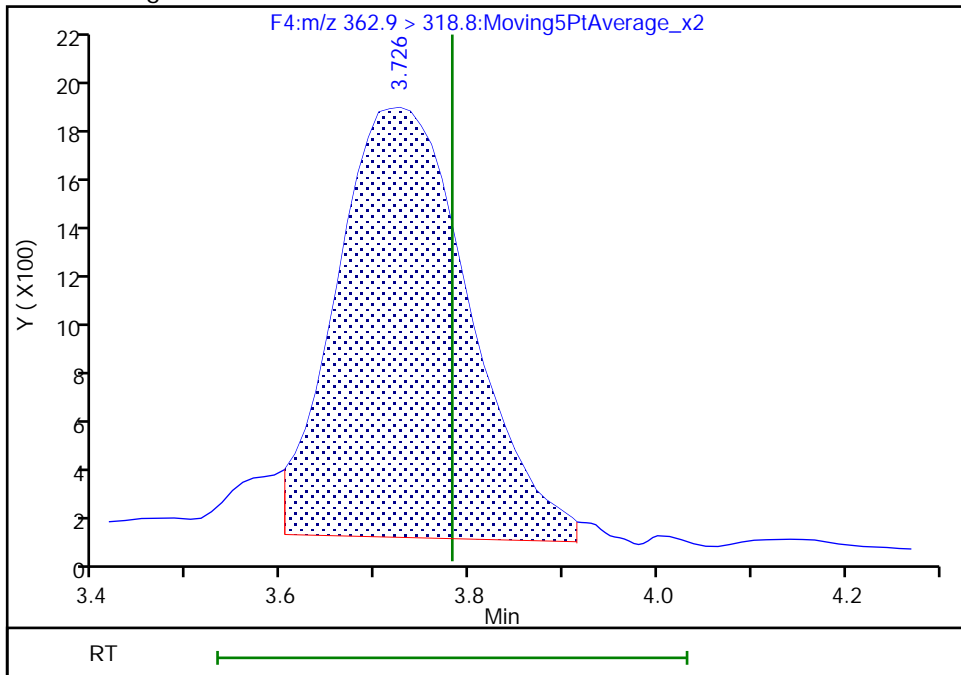
RT: 3.73
Area: 17872
Amount: 2.032190
Amount Units: ng/ml

Processing Integration Results



RT: 3.73
Area: 16871
Amount: 1.918368
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:49:34
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

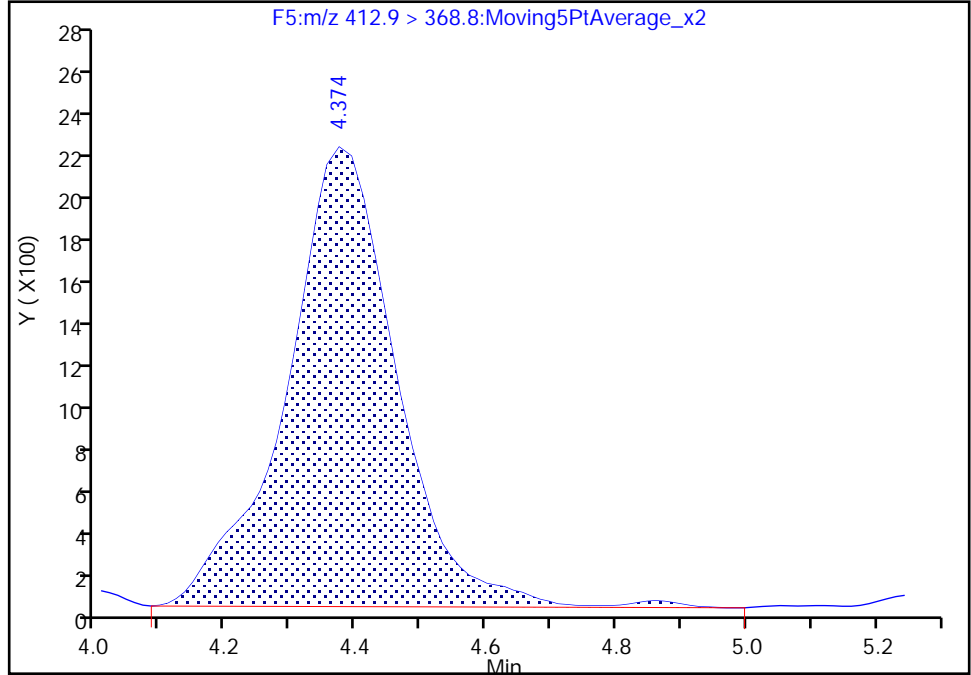
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

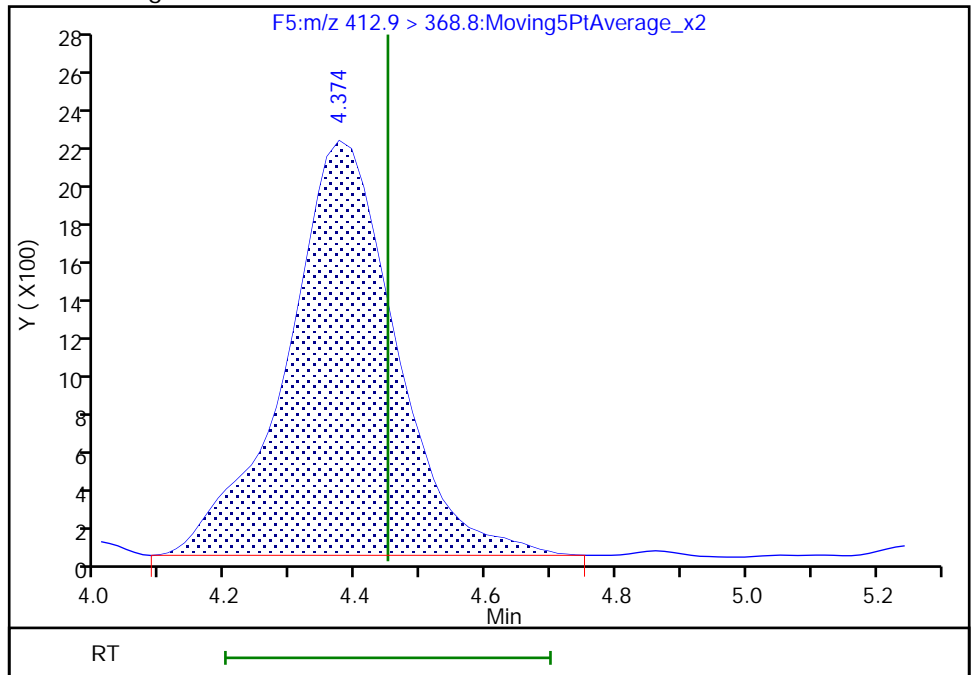
RT: 4.37
Area: 24828
Amount: 3.454098
Amount Units: ng/ml

Processing Integration Results



RT: 4.37
Area: 24501
Amount: 3.408606
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:49:54
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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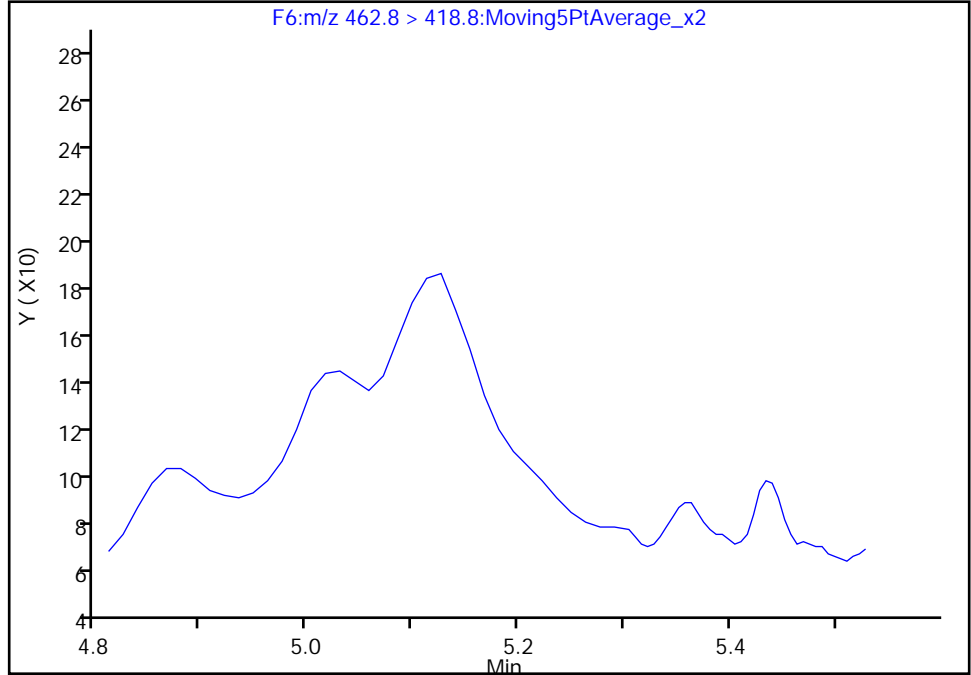
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

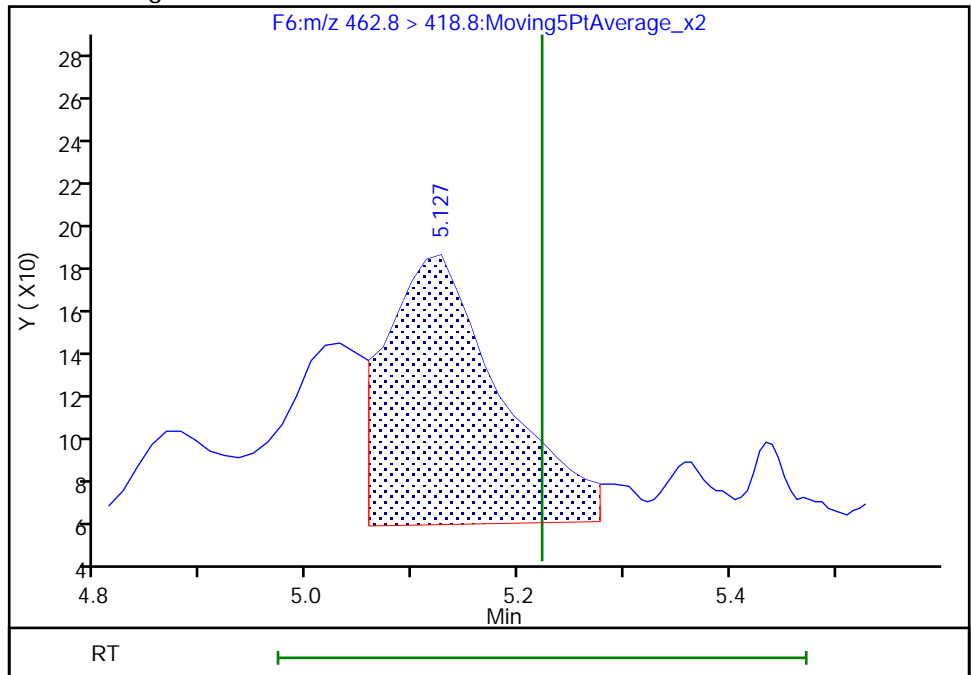
Not Detected
Expected RT: 5.22

Processing Integration Results



Manual Integration Results

RT: 5.13
Area: 906
Amount: 0.077642
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:51:38
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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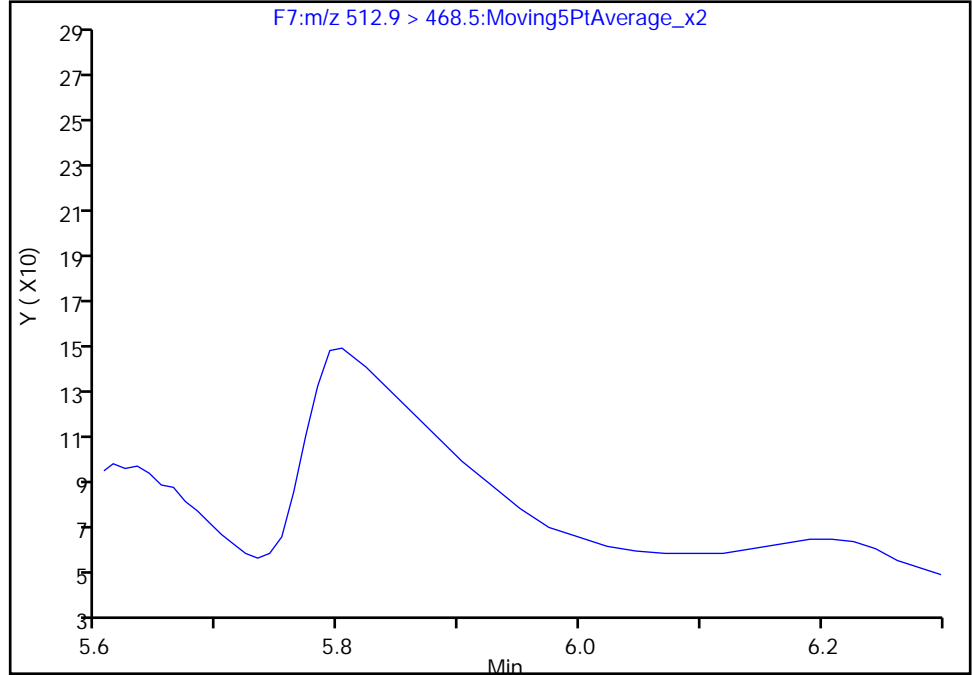
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

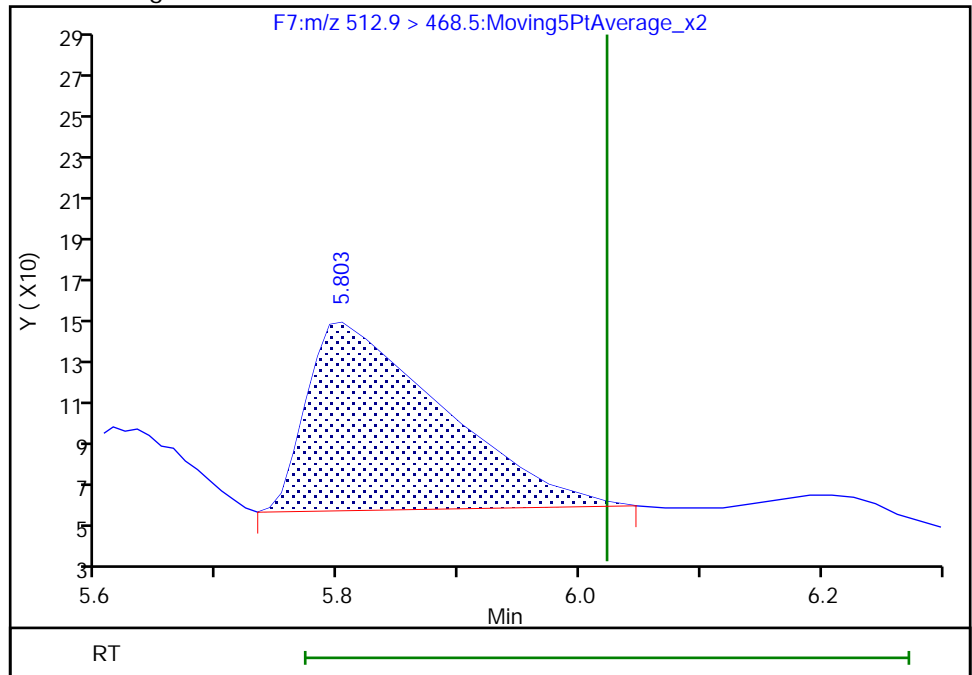
Not Detected
Expected RT: 6.02

Processing Integration Results



Manual Integration Results

RT: 5.80
Area: 688
Amount: 0.065352
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:51:13
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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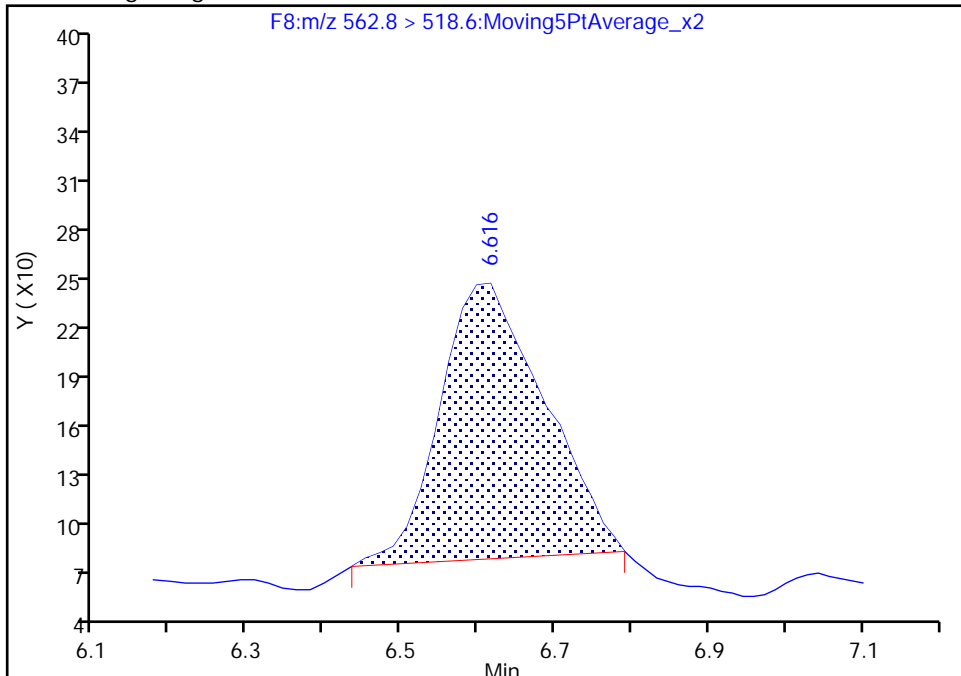
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

33 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

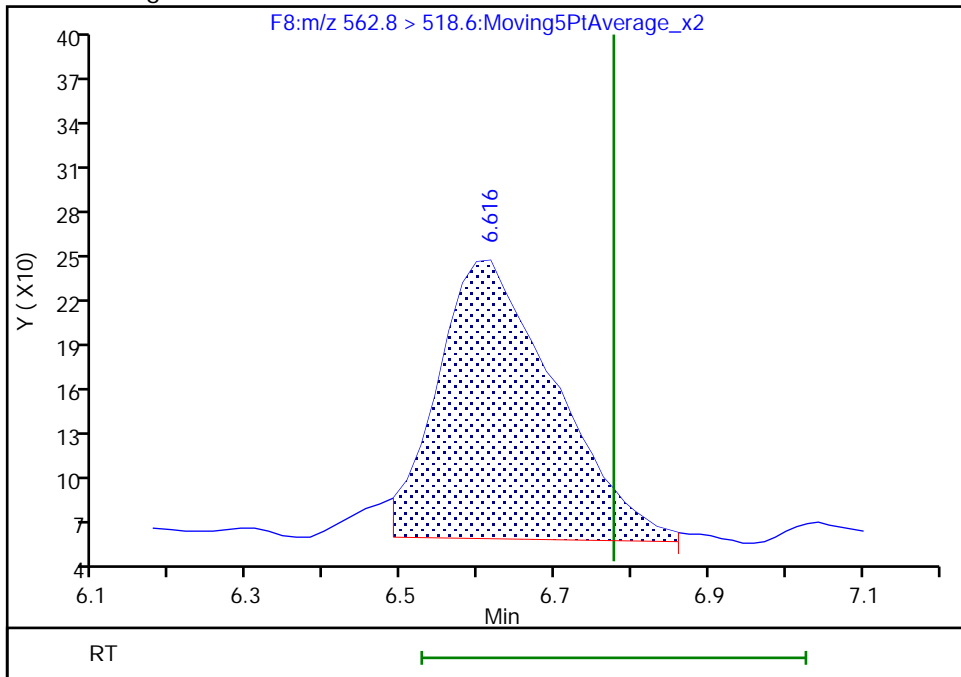
RT: 6.62
Area: 1556
Amount: 0.139234
Amount Units: ng/ml

Processing Integration Results



RT: 6.62
Area: 1963
Amount: 0.175653
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:50:22
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

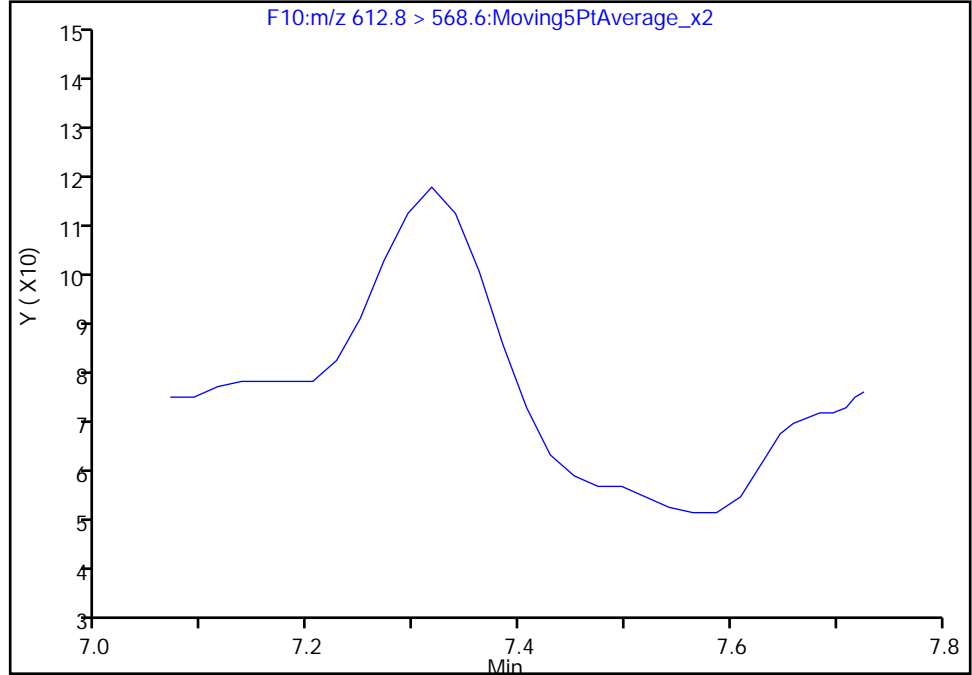
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:M/RM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

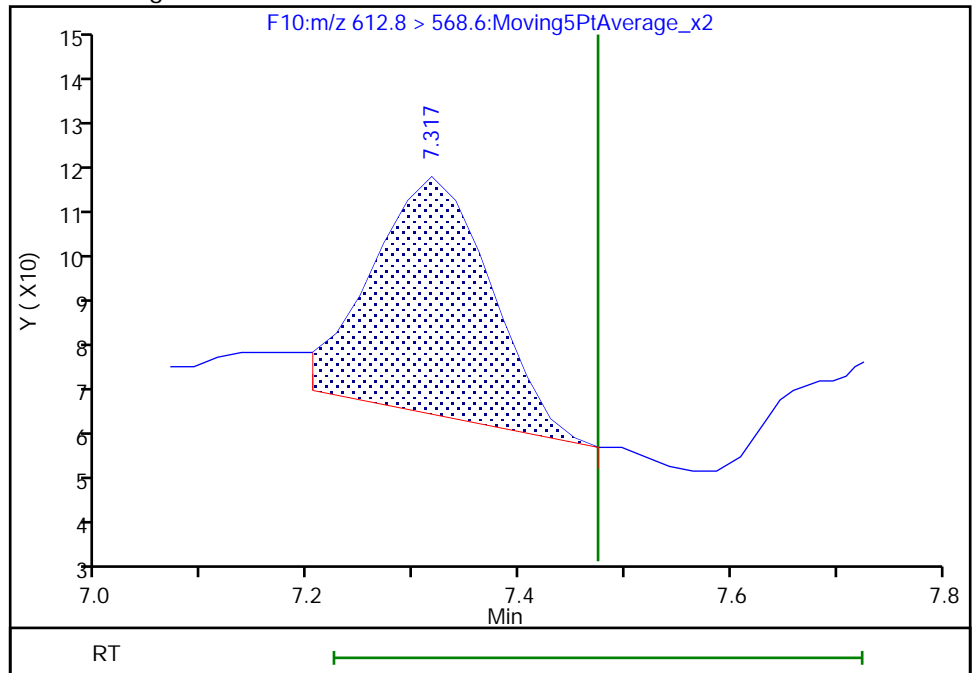
Not Detected
Expected RT: 7.47

Processing Integration Results



RT: 7.32
Area: 389
Amount: 0.037315
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:50:56
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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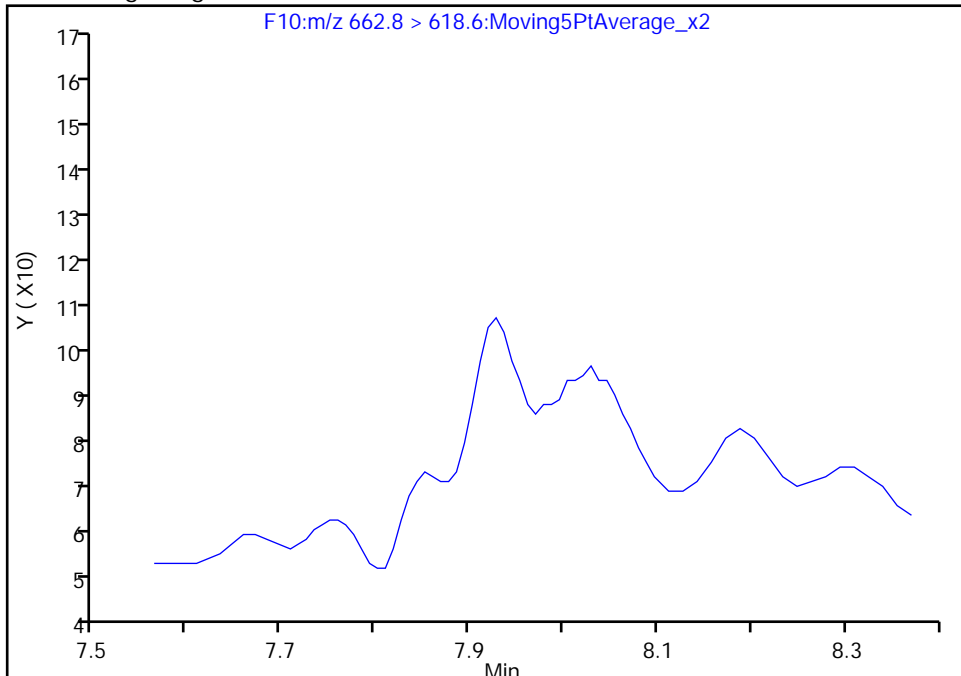
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

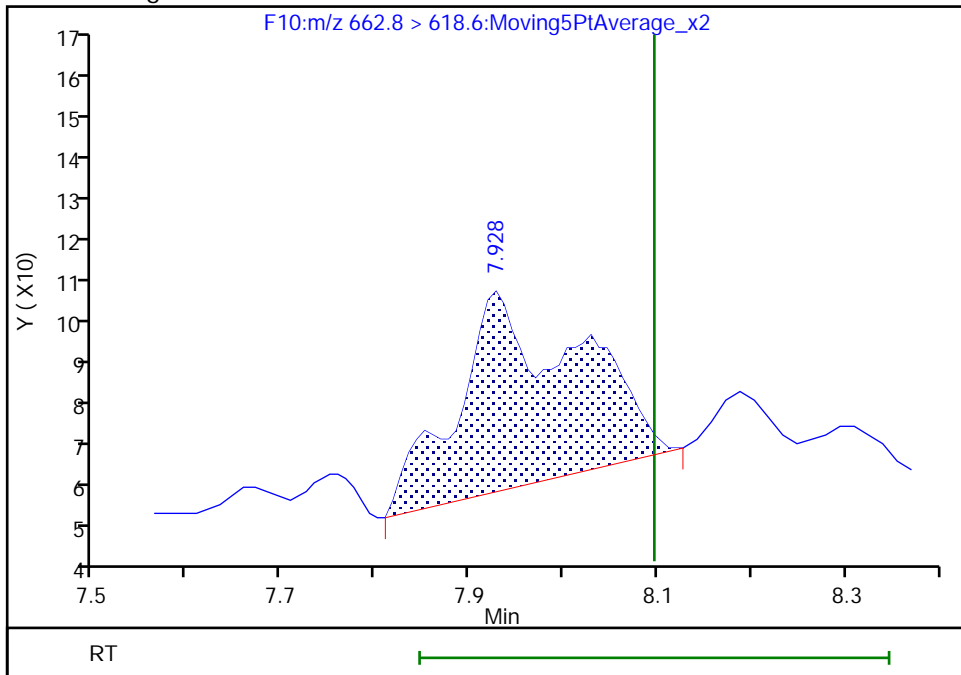
Not Detected
Expected RT: 8.10

Processing Integration Results



Manual Integration Results

RT: 7.93
Area: 403
Amount: 0.037199
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:50:46
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

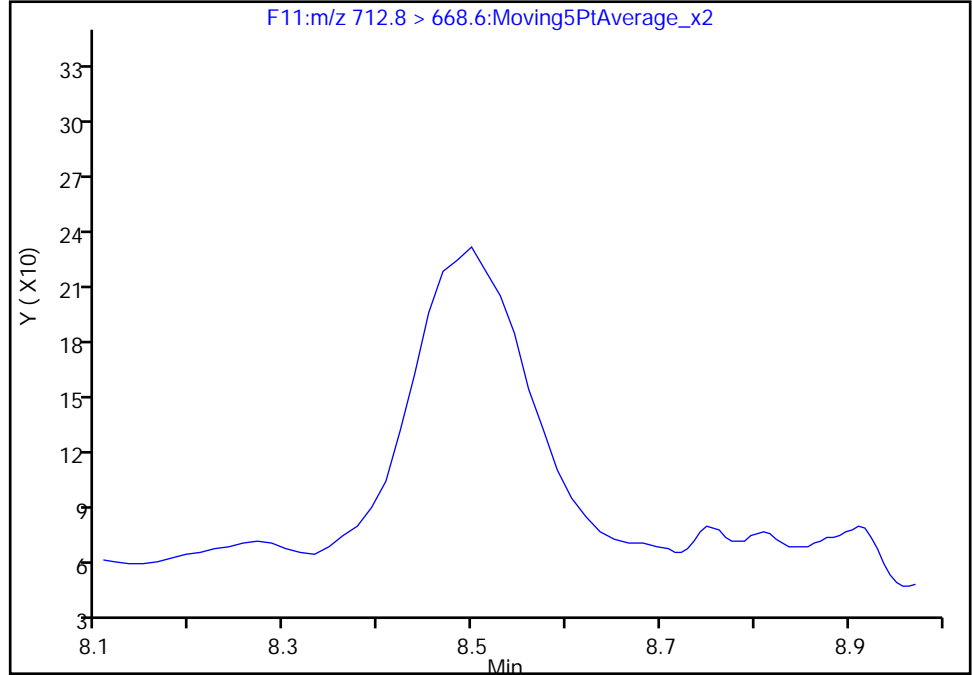
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

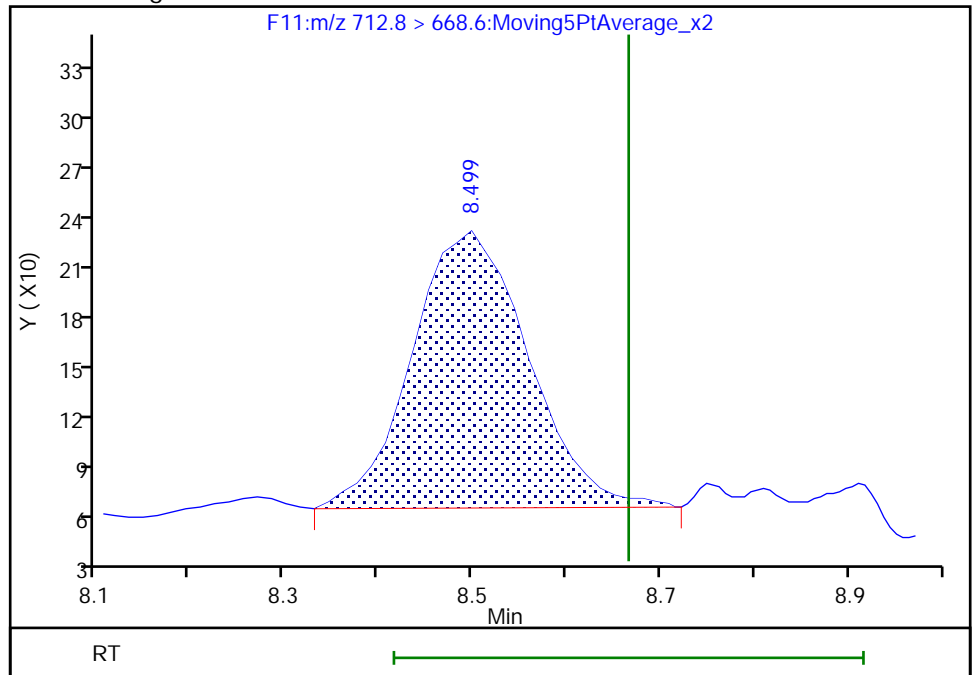
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.50
Area: 1403
Amount: 0.129863
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:50:35
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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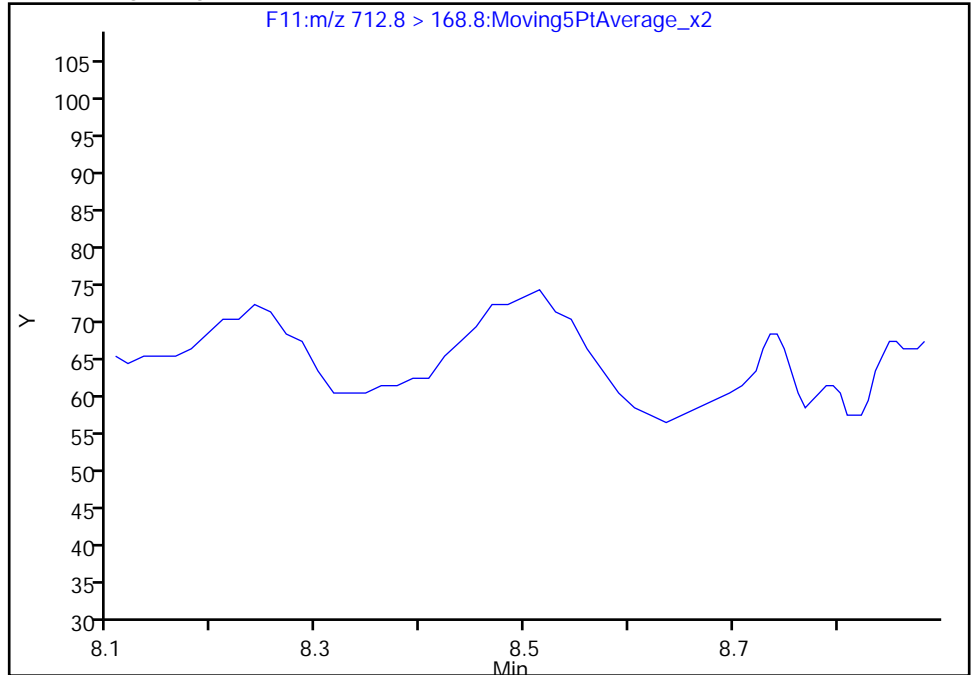
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

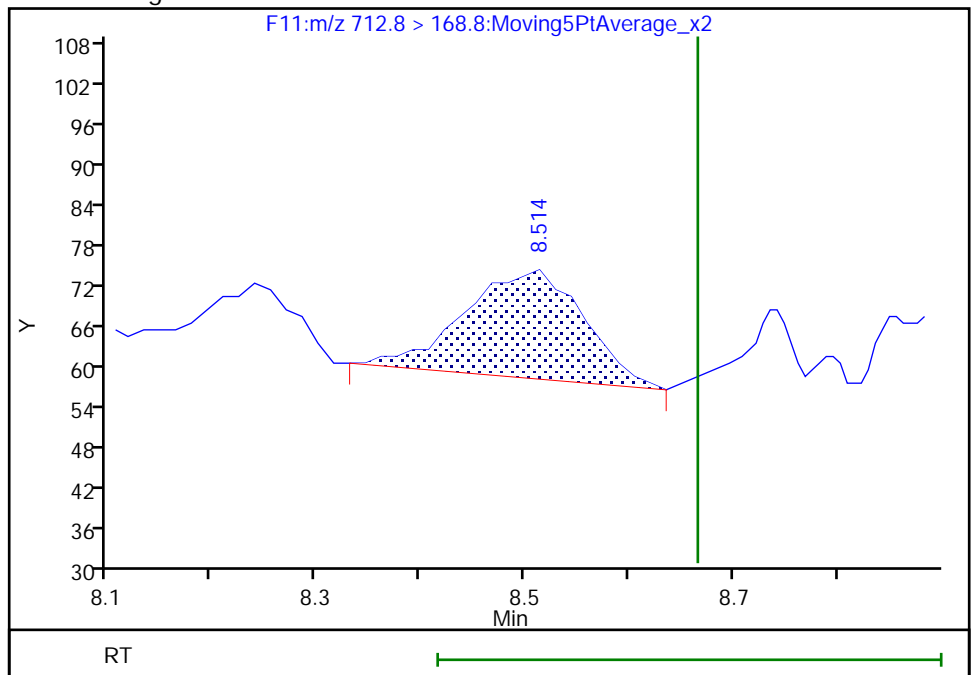
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.51
Area: 128
Amount: 0.129863
Amount Units: ng/ml



TestAmerica Burlington

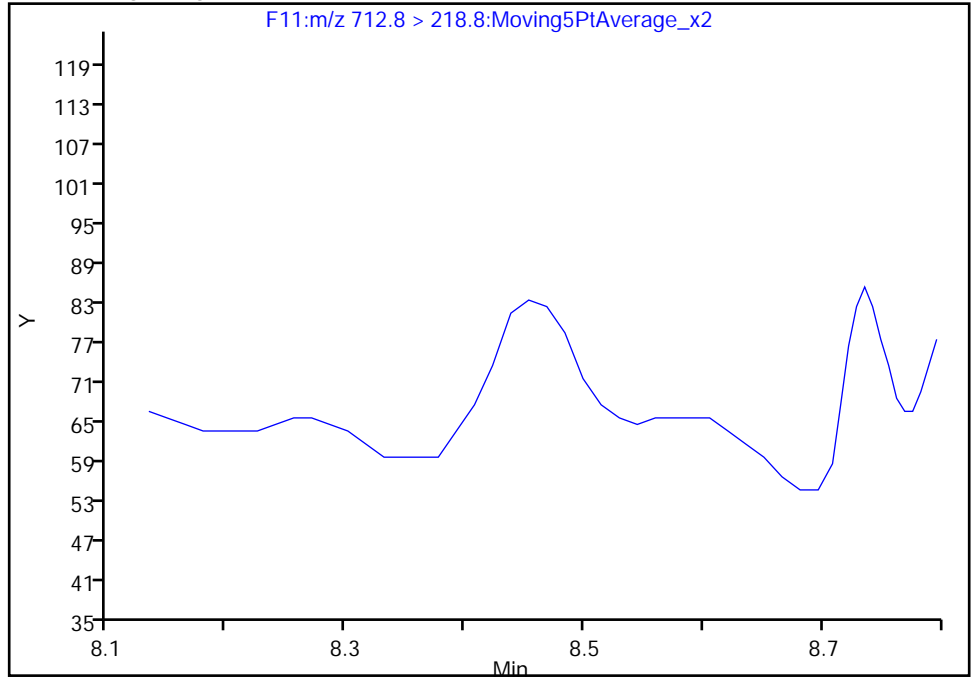
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

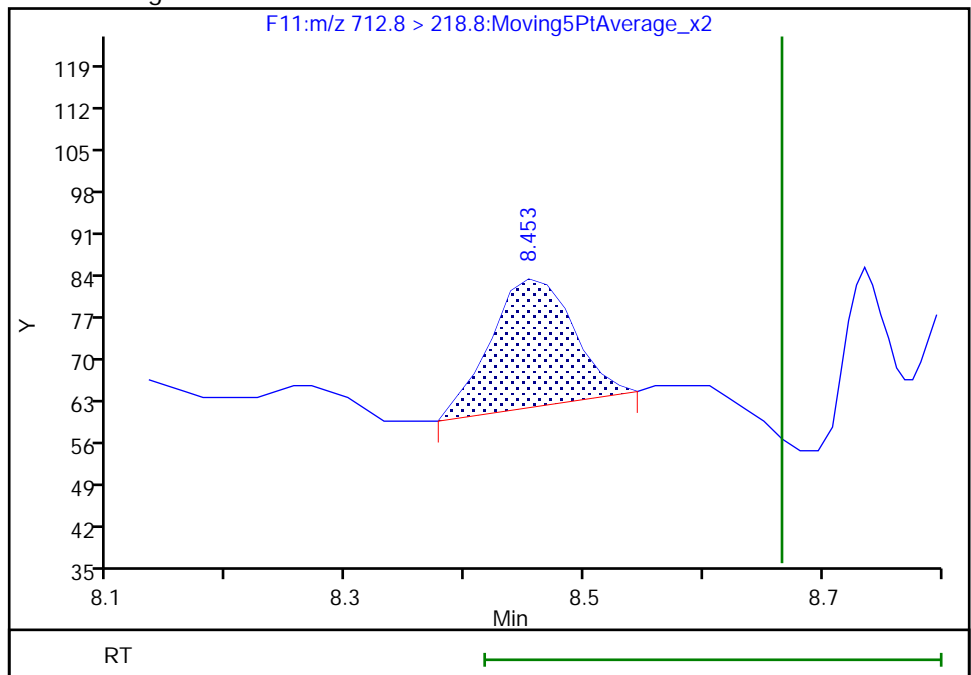
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.45
Area: 104
Amount: 0.129863
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:50:40

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Burlington

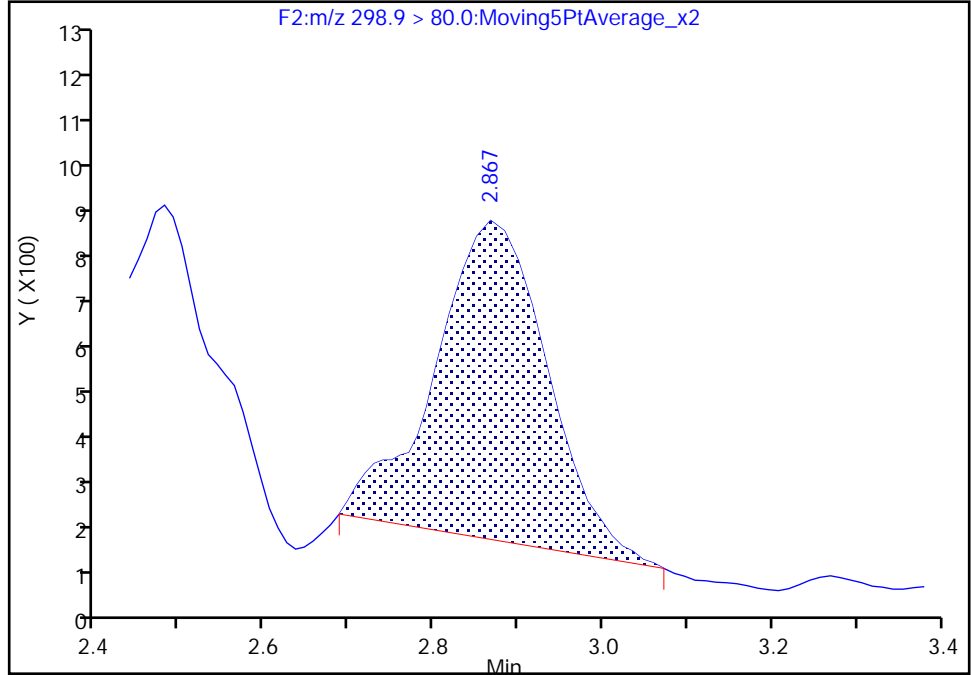
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

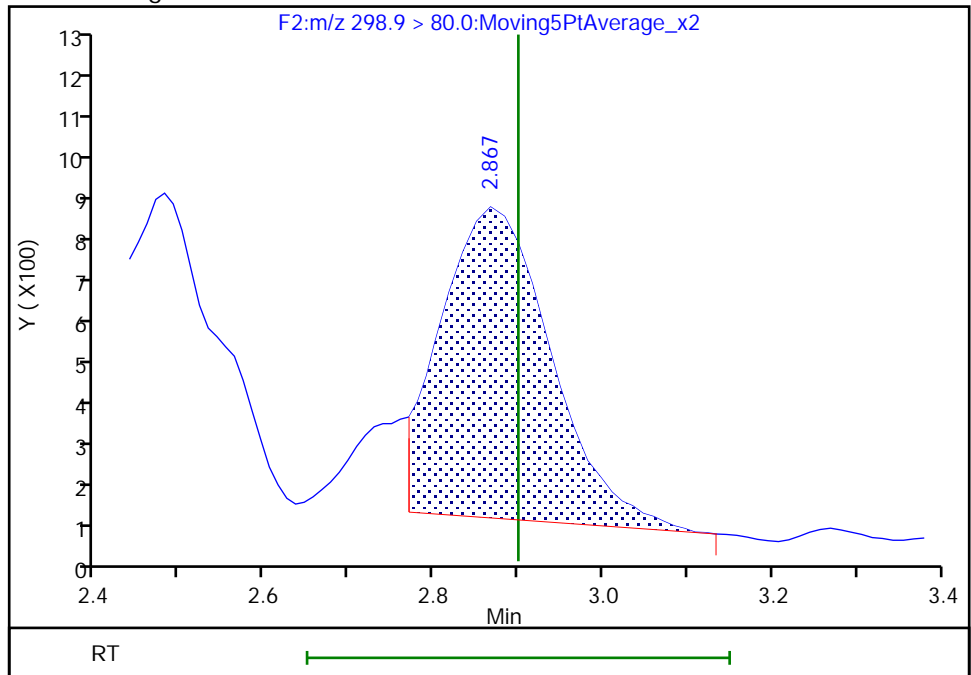
RT: 2.87
Area: 5978
Amount: 1.072274
Amount Units: ng/ml

Processing Integration Results



RT: 2.87
Area: 6296
Amount: 1.129313
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:49:14
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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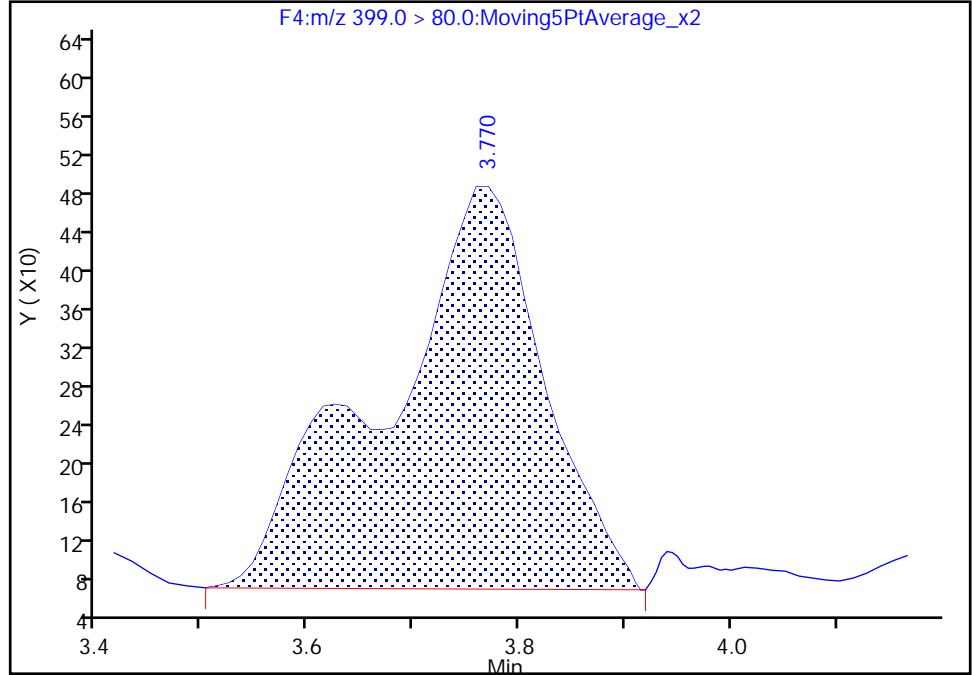
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

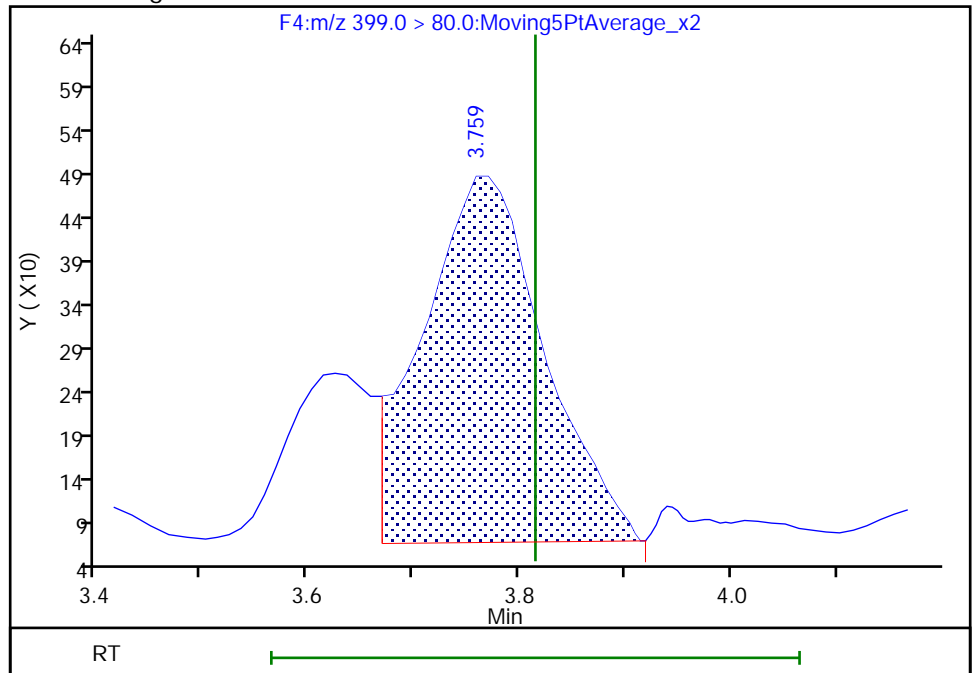
RT: 3.77
Area: 4296
Amount: 0.468161
Amount Units: ng/ml

Processing Integration Results



RT: 3.76
Area: 3267
Amount: 0.299213
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:49:43
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

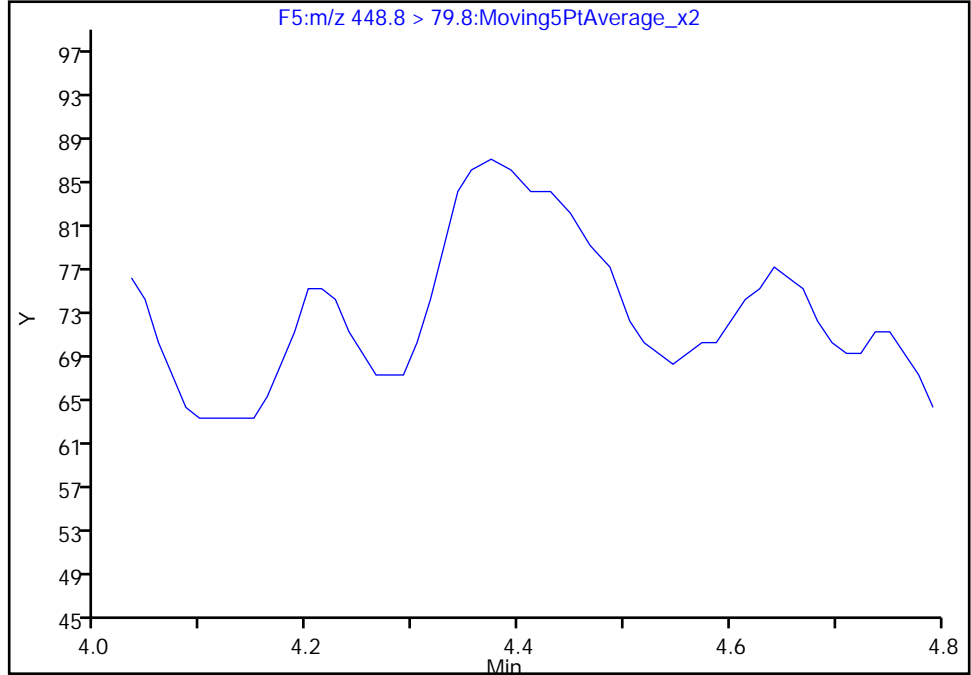
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

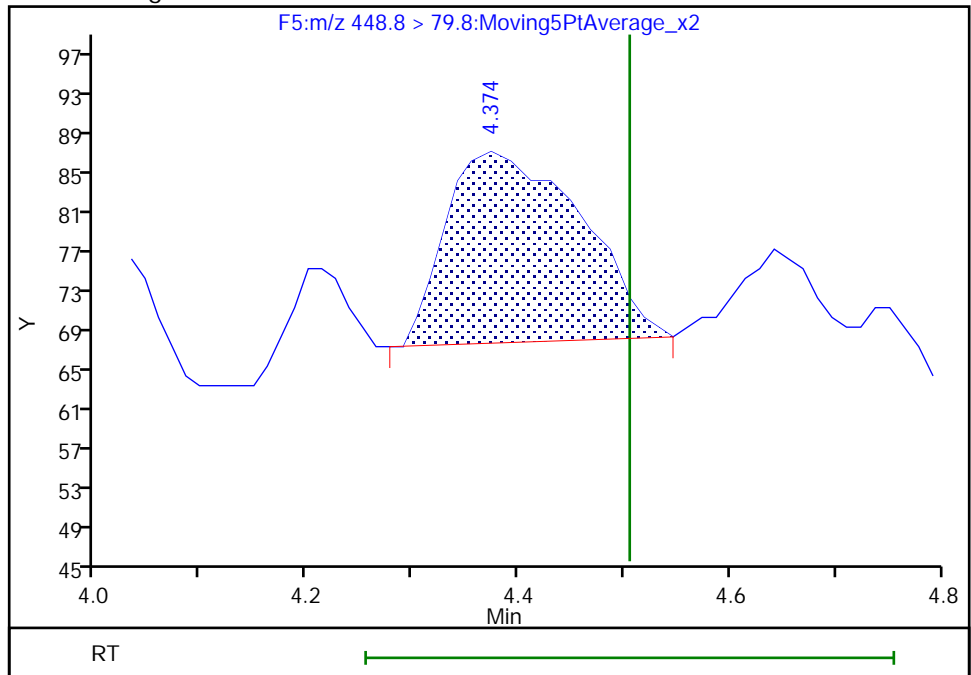
Not Detected
Expected RT: 4.51

Processing Integration Results



Manual Integration Results

RT: 4.37
Area: 173
Amount: 0.055771
Amount Units: ng/ml



TestAmerica Burlington

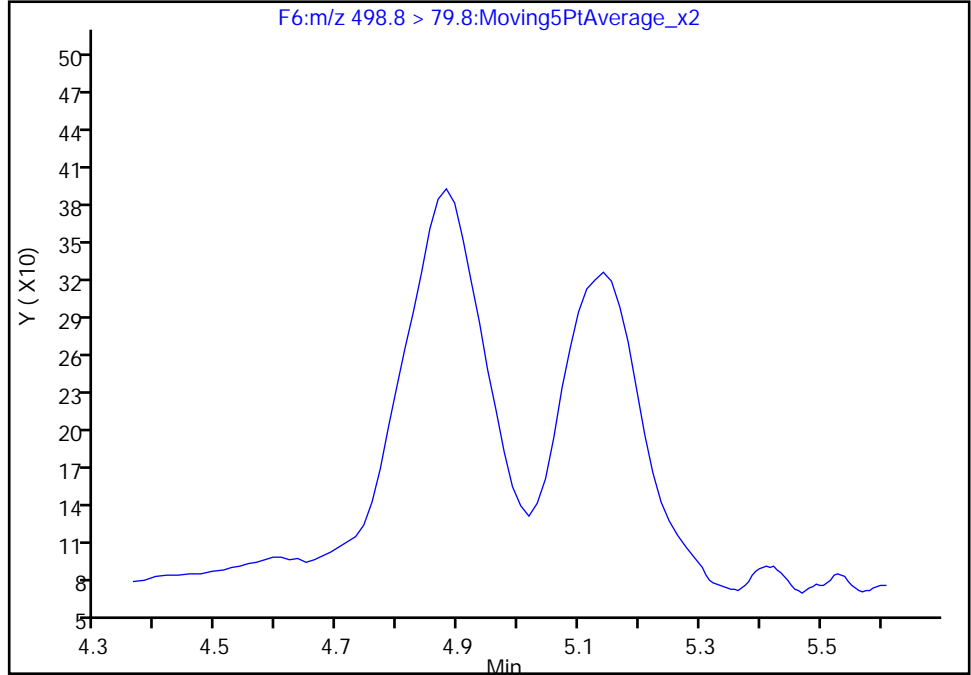
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Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

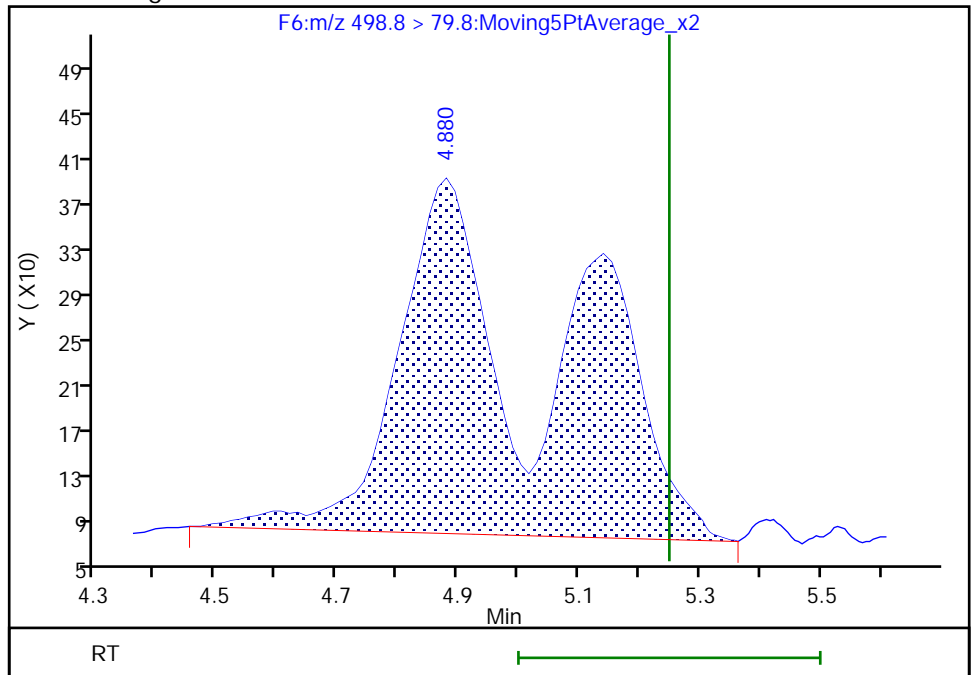
Not Detected
Expected RT: 5.25

Processing Integration Results



RT: 4.88
Area: 5427
Amount: 1.615865
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:51:20
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

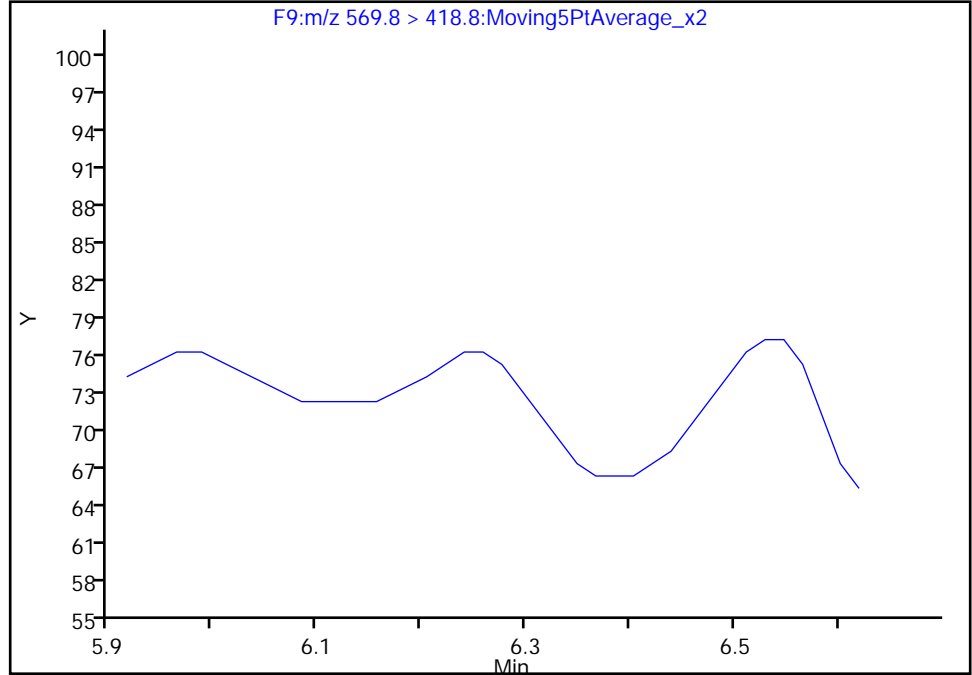
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

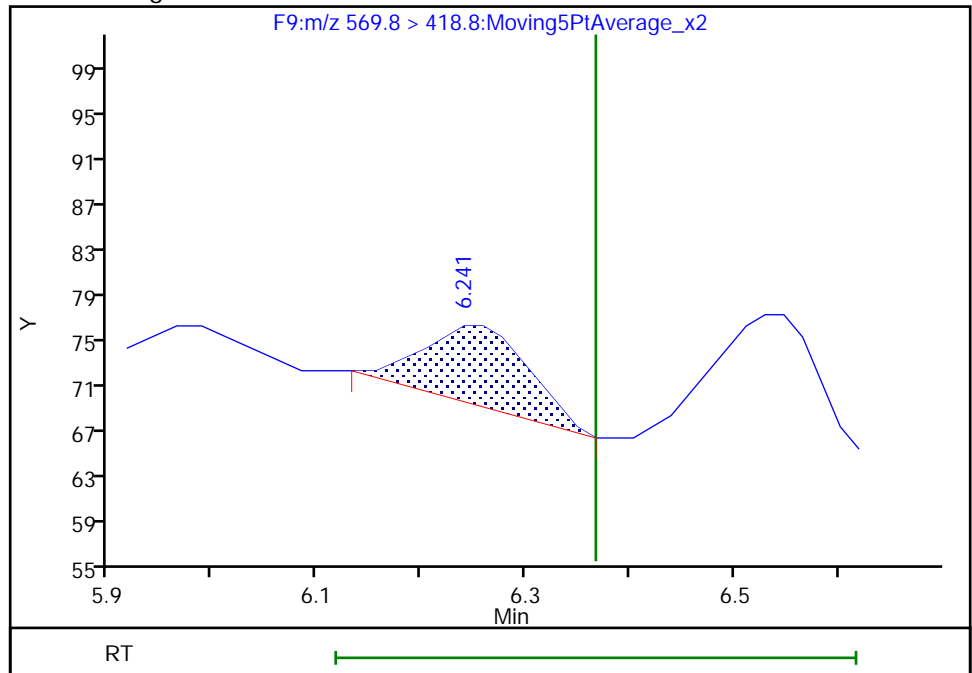
Not Detected
Expected RT: 6.37

Processing Integration Results



Manual Integration Results

RT: 6.24
Area: 49
Amount: 0.023266
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:51:09
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

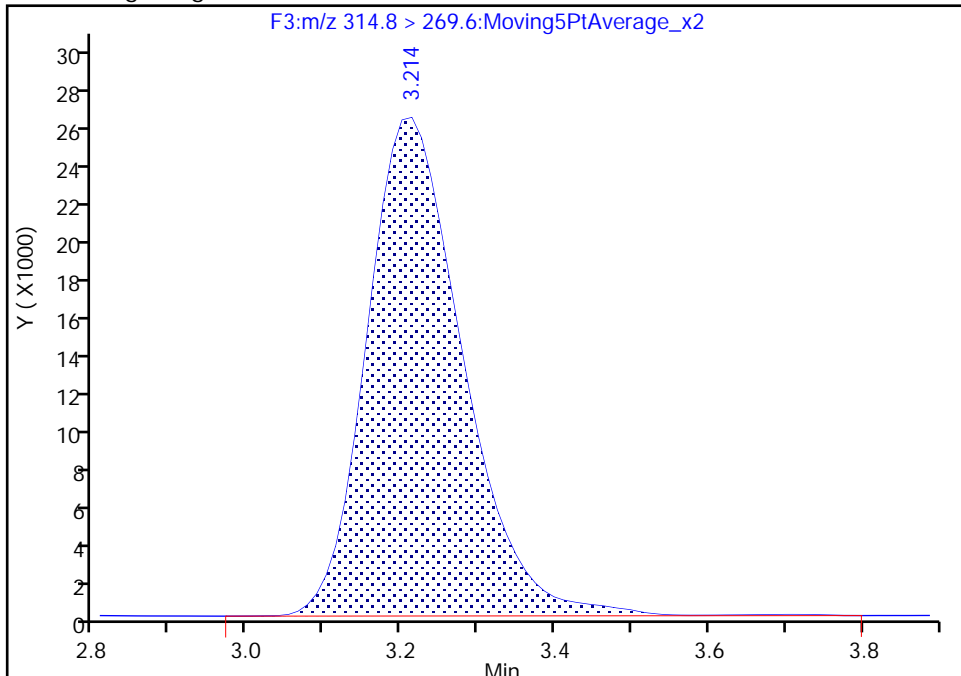
Data File:	\\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d				
Injection Date:	08-Jan-2019 12:33:25	Instrument ID:	LC410		
Lims ID:	480-147040-A-5-A	Lab Sample ID:	200-147040-5		
Client ID:	MW-01R-121918				
Operator ID:	BC	ALS Bottle#:	0	Worklist Smp#:	74
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFCISO_12MRM	Limit Group:	LC_PFC_ICAL		
Column:		Detector:	F3:M/RM		

D 7 13C2 PFHxA, CAS: STL00993

Signal: 1

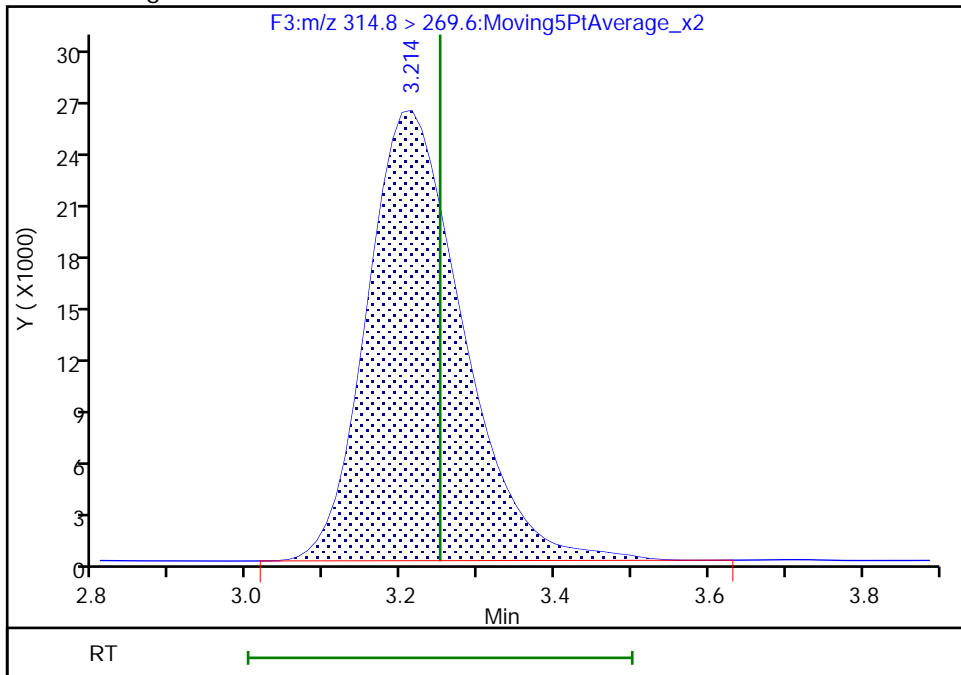
RT: 3.21
Area: 224702
Amount: 30.012358
Amount Units: ng/ml

Processing Integration Results



RT: 3.21
Area: 223795
Amount: 30.234330
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:49:20
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

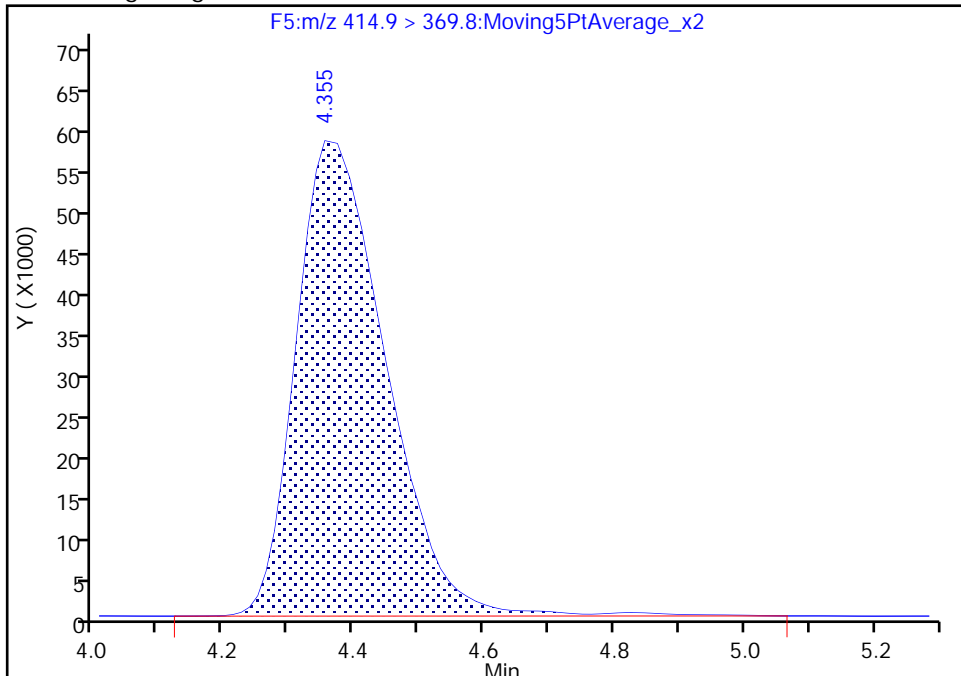
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A74.d
Injection Date: 08-Jan-2019 12:33:25 Instrument ID: LC410
Lims ID: 480-147040-A-5-A Lab Sample ID: 200-147040-5
Client ID: MW-01R-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 74
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

* 15 13C2 PFOA, CAS: STL00623

Signal: 1

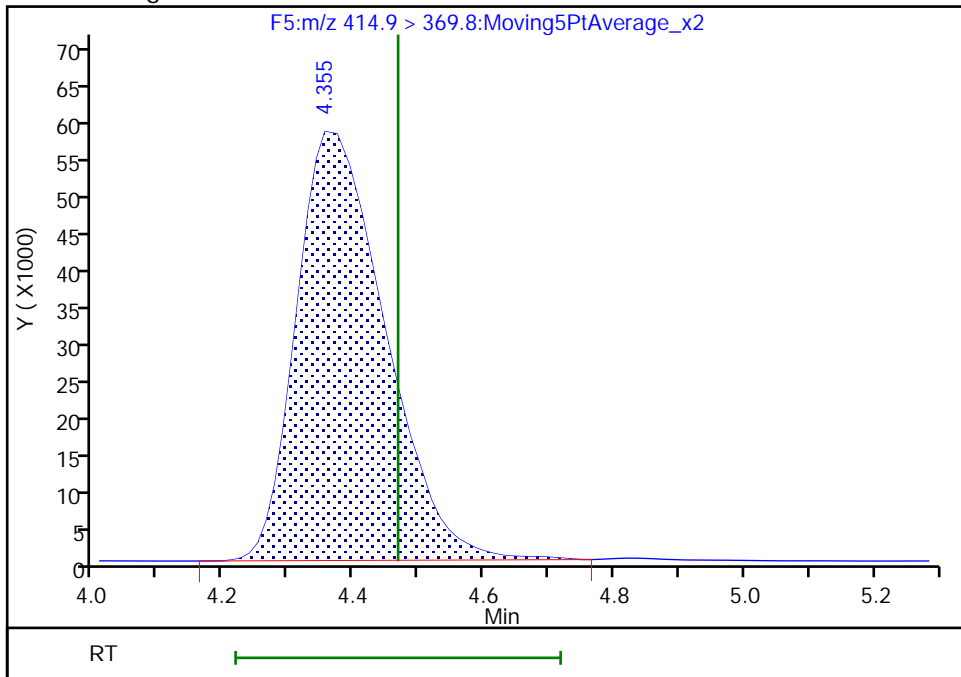
RT: 4.36
Area: 557869
Amount: 50.000000
Amount Units: ng/ml

Processing Integration Results



RT: 4.36
Area: 551538
Amount: 50.000000
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:50:01
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: FD-01-121918 Lab Sample ID: 480-147040-6
 Matrix: Water Lab File ID: PF010719A75.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 00:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 287.2 (mL) Date Analyzed: 01/08/2019 12:49
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	7.0		1.7	0.36
2706-90-3	Perfluoropentanoic acid (PFPeA)	9.2		1.7	0.65
307-24-4	Perfluorohexanoic acid (PFHxA)	3.0		1.7	0.21
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.6	J	1.7	0.28
335-67-1	Perfluorooctanoic acid (PFOA)	5.1	B	1.7	0.28
375-95-1	Perfluorononanoic acid (PFNA)	0.52	J	1.7	0.33
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.33
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.22
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.30
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.39
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.5		1.7	0.38
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.34	J	1.7	0.23
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	5.2		1.7	0.66
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.46
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		1.7	0.49
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	0.39
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	0.61
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	0.87
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	0.49

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: FD-01-121918 Lab Sample ID: 480-147040-6
 Matrix: Water Lab File ID: PF010719A75.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 00:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 287.2 (mL) Date Analyzed: 01/08/2019 12:49
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	105		50-150
STL01892	13C4 PFHpA	60		50-150
STL00990	13C4 PFOA	77		50-150
STL00991	13C4 PFOS	115		50-150
STL00995	13C5 PFNA	86		50-150
STL00992	13C4 PFBA	32		25-150
STL00993	13C2 PFHxA	39	*	50-150
STL00996	13C2 PFDA	105		50-150
STL00997	13C2 PFUnA	107		50-150
STL00998	13C2 PFDoA	100		50-150
STL01056	13C8 FOSA	84		25-150
STL01893	13C5 PFPeA	33		25-150
STL02116	13C2 PFTeDA	105		50-150
STL02118	d3-NMeFOSAA	82		50-150
STL02117	d5-NEtFOSAA	96		50-150
STL02279	M2-6:2 FTS	278	*	25-150
STL02280	M2-8:2 FTS	218	*	25-150
STL02337	13C3 PFBS	72		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
 Lims ID: 480-147040-A-6-A
 Client ID: FD-01-121918
 Sample Type: Client
 Inject. Date: 08-Jan-2019 12:49:16 ALS Bottle#: 0 Worklist Smp#: 75
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-075 6
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:35:28 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 17:55:15
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.334	2.402	-0.068	1.000	75881	16.2	32.4	68.3	M
2 Perfluorobutanoic acid	212.9 > 168.9	2.343	2.402	-0.059	1.004	5381	3.99		10.4	M
D 3 13C5 PFPeA	267.7 > 222.6	2.739	2.818	-0.079	1.000	49152	16.6	33.1	47.3	M
4 Perfluoropentanoic acid	262.9 > 218.8	2.760	2.818	-0.058	1.008	14751	5.27		2.0	M
D 6 13C3 PFBS	302.0 > 79.8	2.791	2.900	-0.109	1.000	81954	33.5	71.9	103	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.770	2.900	-0.130	0.993	6179	2.01		1.7	M
D 7 13C2 PFHxA	314.8 > 269.6	3.115	3.250	-0.135	1.000	105000	19.6	39.3	218	M
8 Perfluorohexanoic acid	312.8 > 268.6	3.127	3.250	-0.123	1.004	3816	1.75		1.9	M
D 9 13C4 PFHpA	366.9 > 321.8	3.603	3.782	-0.179	1.000	294607	30.1	60.2	494	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.625	3.782	-0.157	1.006	5268	0.9147		3.6	a
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.637	3.815	-0.178	0.997	1954	0.1943		2.8	
D 11 18O2 PFHxS	402.9 > 83.8	3.648	3.826	-0.178	1.000	140755	49.7	105	319	
D 13 M2-6:2 FTS	428.6 > 408.6	4.188	4.411	-0.223	1.000	115262	131.9	278	807	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.278	4.411	-0.133	1.022	18278	0.0762		3.7	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.239	4.449	-0.210	1.000	16830	2.94			12.1	M
D 17 13C4 PFOA										
416.9 > 371.8	4.239	4.468	-0.229	1.000	289196	38.7		77.4	576	
* 15 13C2 PFOA										
414.9 > 369.8	4.239	4.468	-0.229		398384	50.0			732	
D 20 13C5 PFNA										
467.8 > 422.8	5.004	5.222	-0.218	1.000	434203	43.1		86.1	609	
19 Perfluorononanoic acid										M
462.8 > 418.8	5.004	5.222	-0.218	1.000	2865	0.3001			2.7	M
D 22 13C4 PFOS										
502.8 > 79.8	5.017	5.236	-0.219	1.000	137810	54.9		115	519	
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	5.031	5.250	-0.219	1.003	8859	2.97			13.8	M
23 1H,1H,2H,2H-perfluorodecanesulfoni										M
526.8 > 506.5	5.783	5.998	-0.215	1.002	27	0.006494			0.5	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.773	5.998	-0.225	1.000	246853	104.3		218	2049	
25 Perfluorodecanoic acid										M
512.9 > 468.5	5.863	6.022	-0.159	1.012	523	0.0476			0.9	M
D 26 13C2 PFDA										
514.9 > 469.5	5.793	6.022	-0.229	1.000	544641	52.4		105	932	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.156	6.367	-0.211	1.000	108644	40.9		81.8	552	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.544	6.734	-0.190	1.000	108587	48.2		96.4	490	
D 32 13C2 PFUnA										
564.8 > 519.8	6.580	6.777	-0.197	1.000	580906	53.7		107	1621	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.598	6.777	-0.179	1.003	769	0.0645			4.2	
D 35 13C8 FOSA										
505.8 > 77.8	6.931	6.945	-0.014	1.000	202499	41.9		83.8	1253	
D 37 13C2 PFDaA										
614.8 > 569.6	7.294	7.474	-0.180	1.000	685912	50.1		100	3278	
36 Perfluorododecanoic acid										M
612.8 > 568.6	7.294	7.474	-0.180	1.000	190	0.0161			1.2	M
38 Perfluorotridecanoic acid										M
662.8 > 618.6	7.970	8.097	-0.127	0.938	281	0.0219			2.8	M
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.499	8.666	-0.167	1.000	453	0.0354	Target=1.00		3.6	M
712.8 > 168.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
712.8 > 218.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
D 40 13C2 PFTeDA										
714.8 > 669.6	8.499	8.681	-0.182	1.000	657084	52.3		105	1369	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d

Injection Date: 08-Jan-2019 12:49:16

Instrument ID: LC410

Lims ID: 480-147040-A-6-A

Lab Sample ID: 200-147040-6

Client ID: FD-01-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 75

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

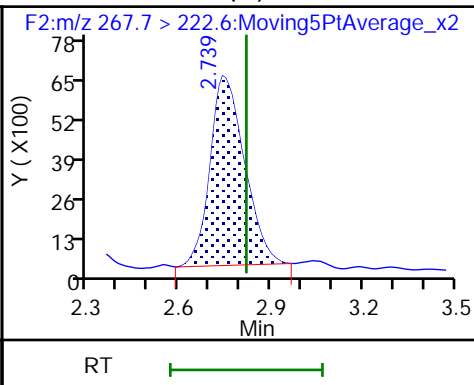
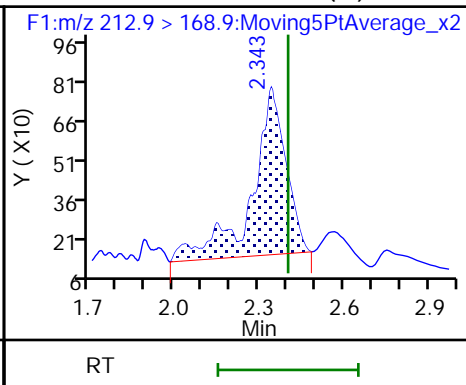
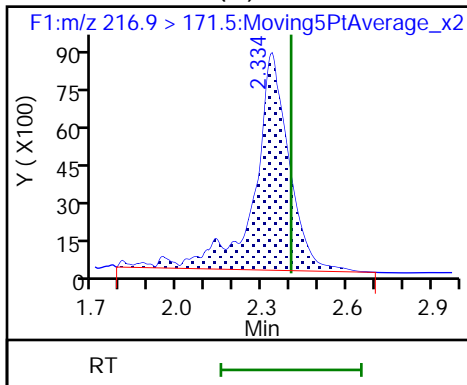
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

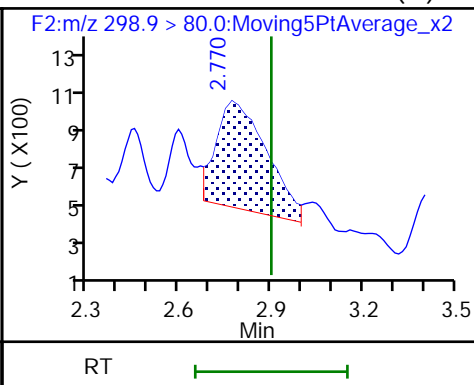
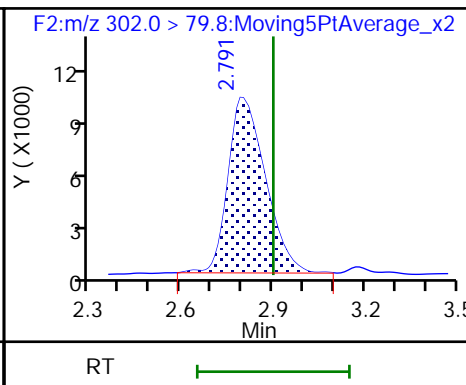
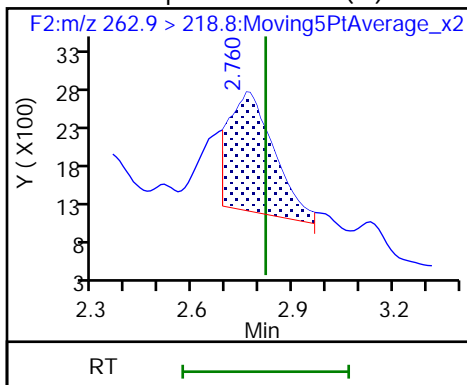
D 3 13C5 PFPeA (M)



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

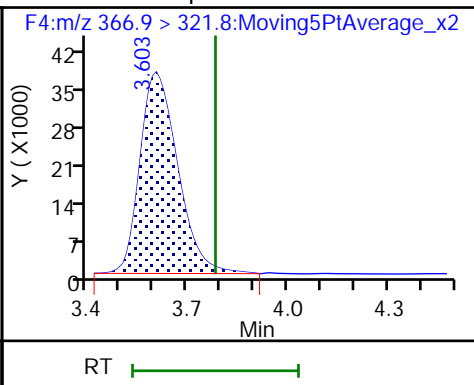
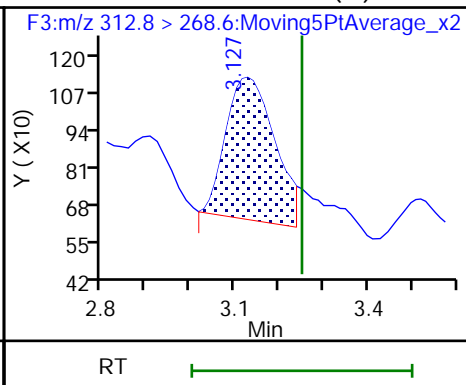
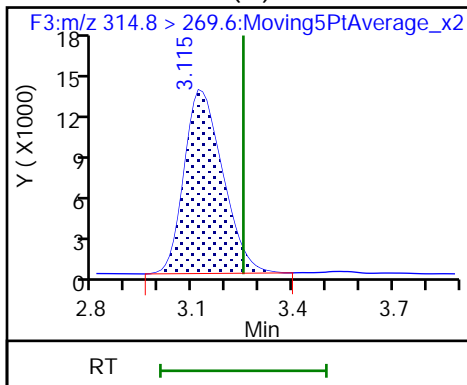
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA (M)

8 Perfluorohexanoic acid (M)

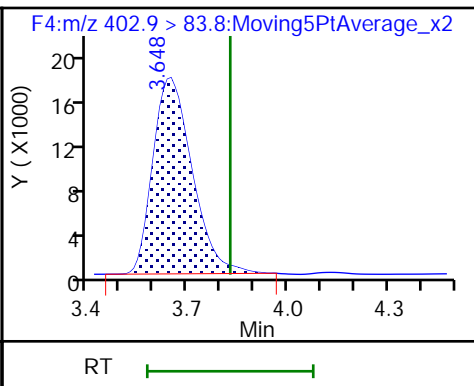
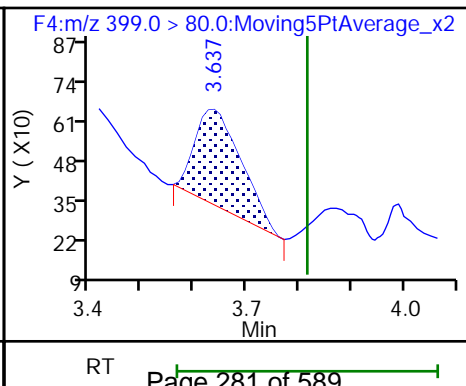
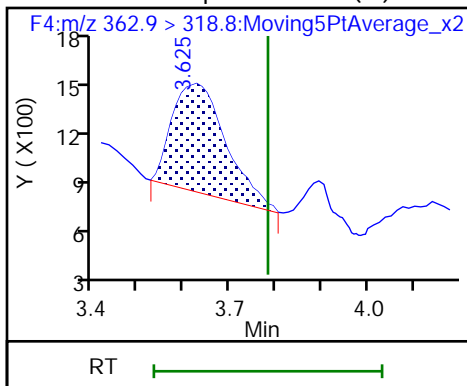
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

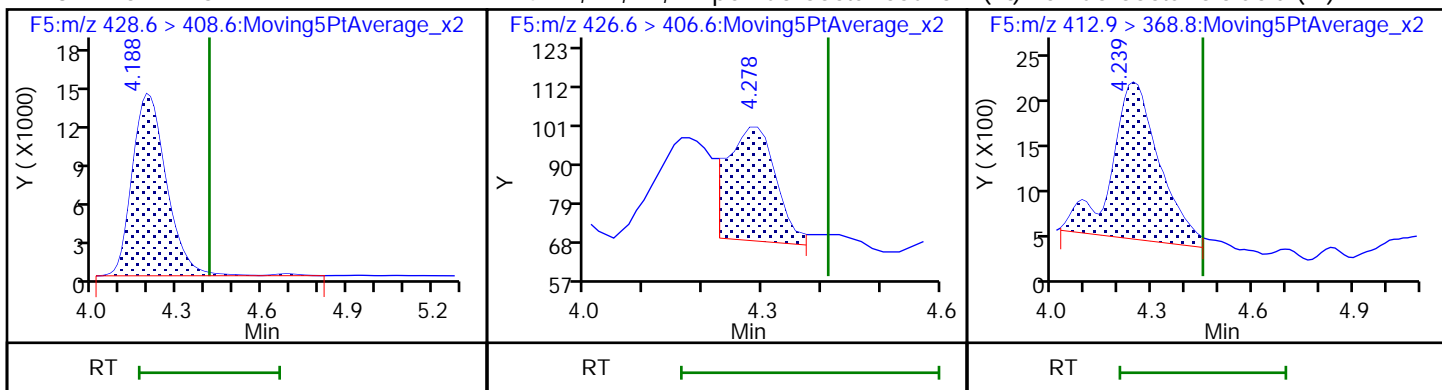
12 Perfluorohexanesulfonic acid

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

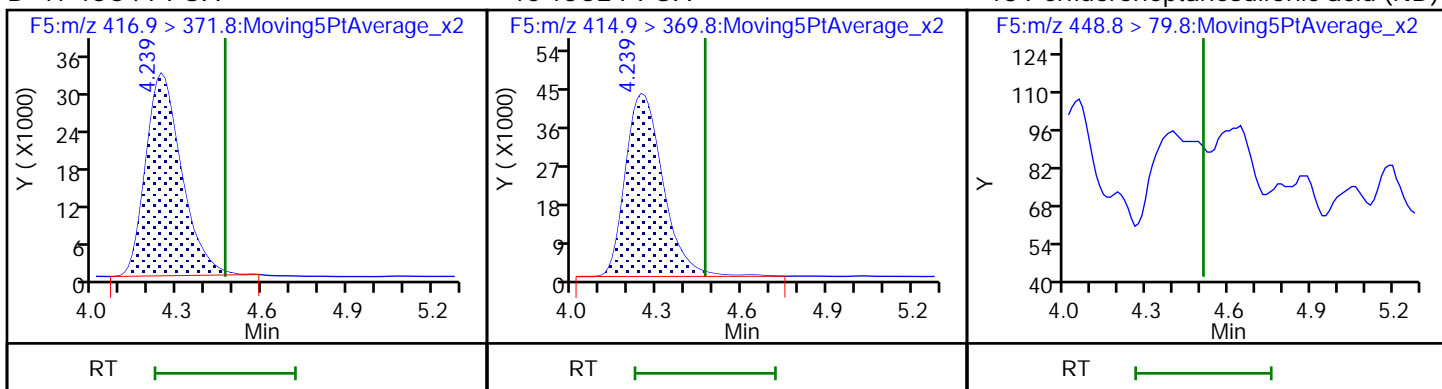
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA

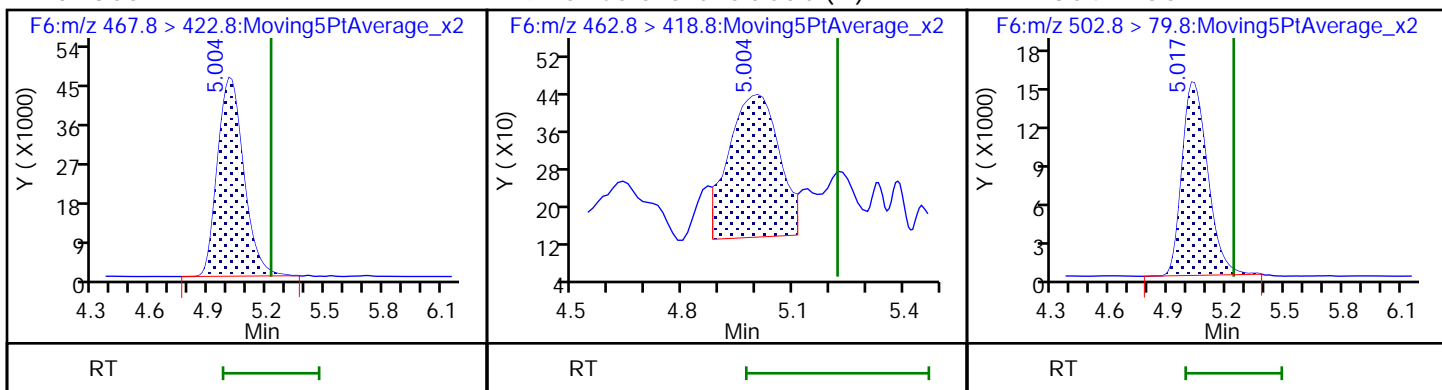
18 Perfluoroheptanesulfonic acid (ND)



D 20 13C5 PFNA

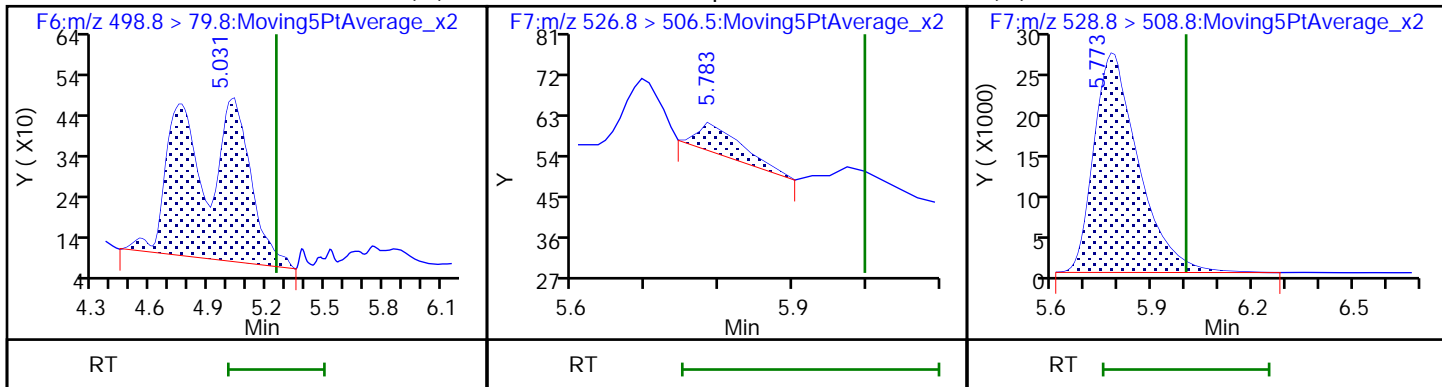
19 Perfluorononanoic acid (M)

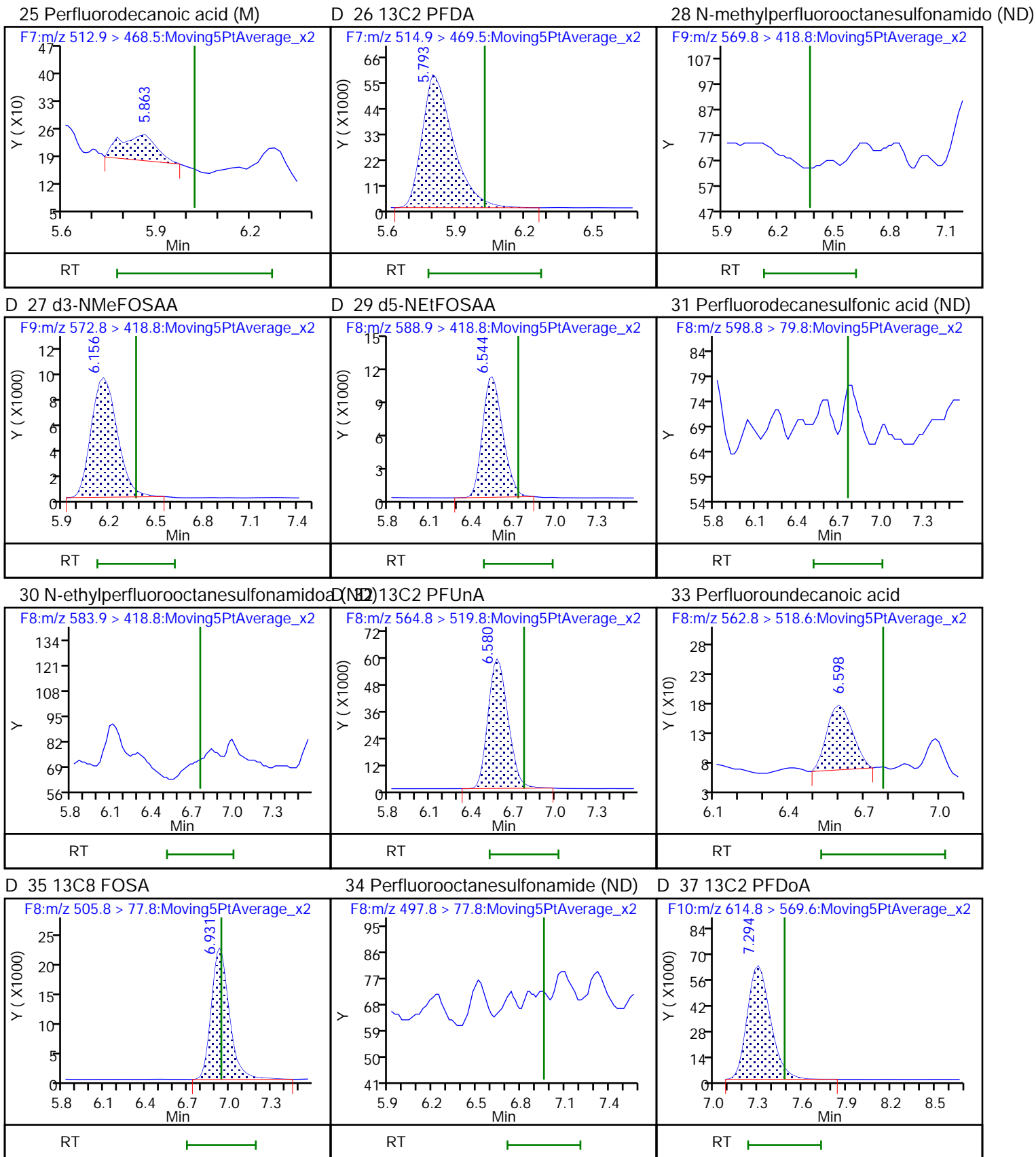
D 22 13C4 PFOS

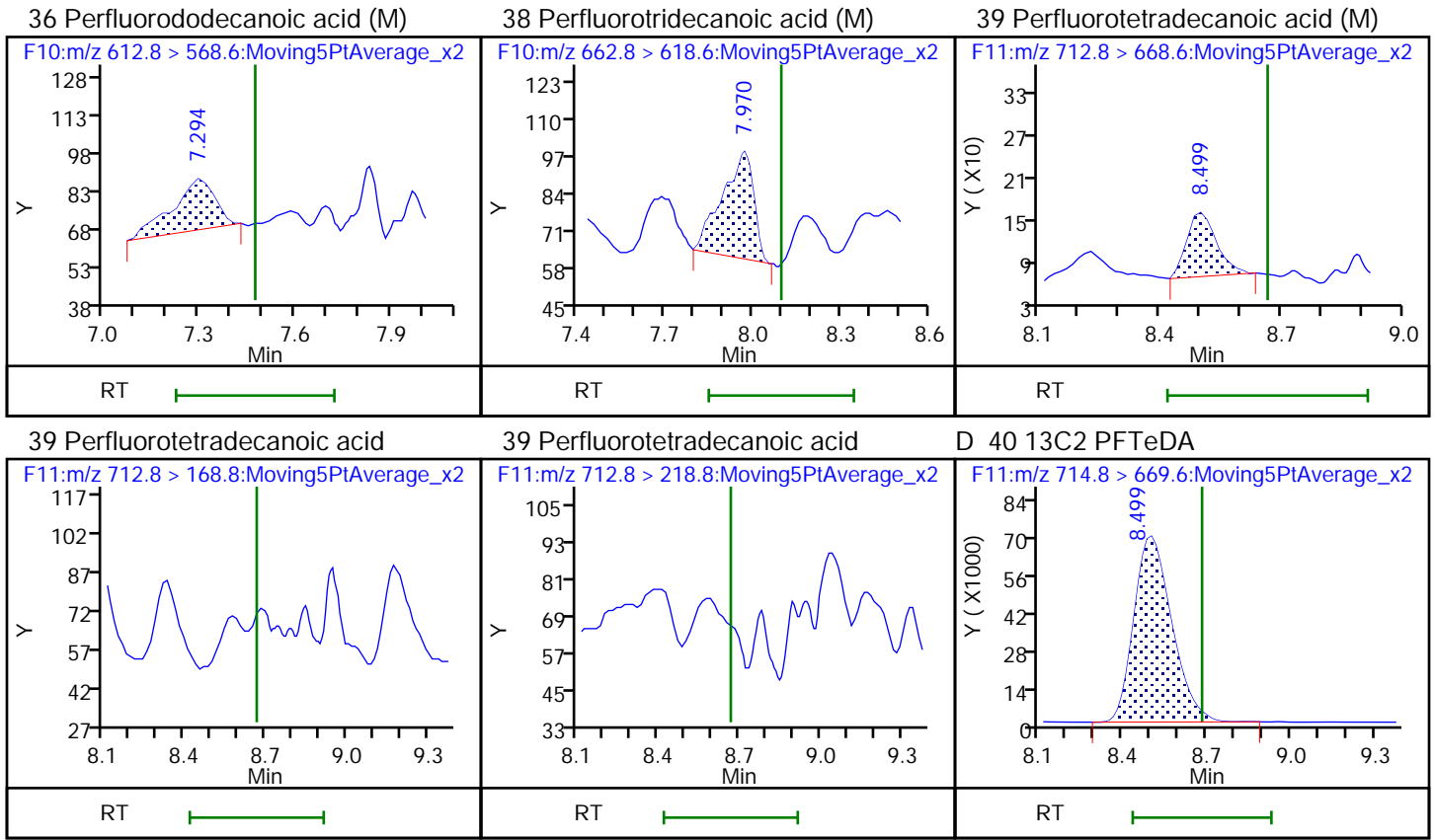


21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfoni (M) M2-8:2 FTS







TestAmerica Burlington

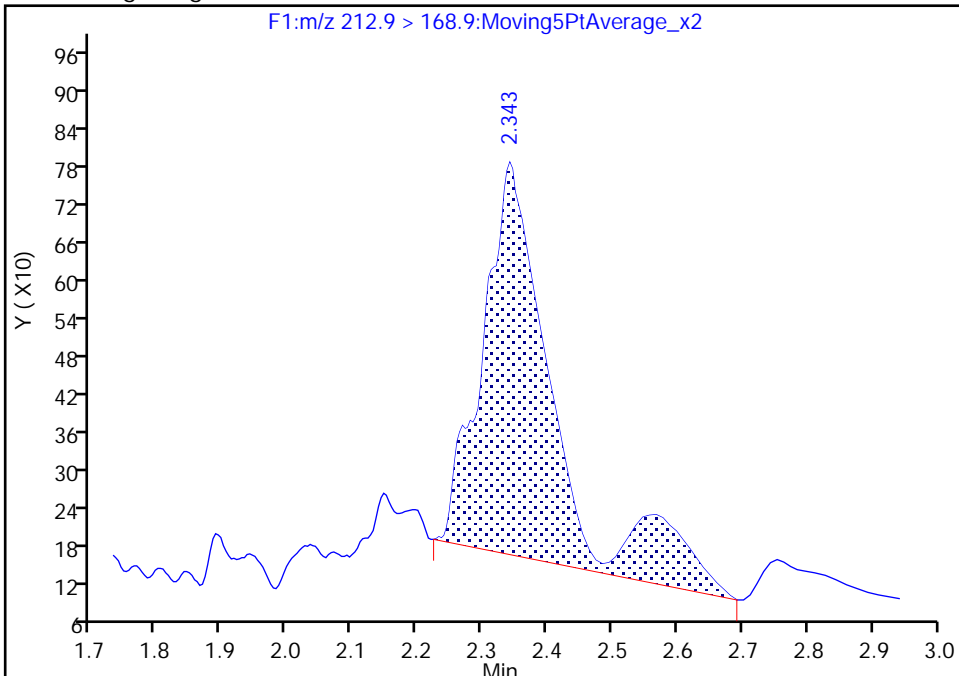
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

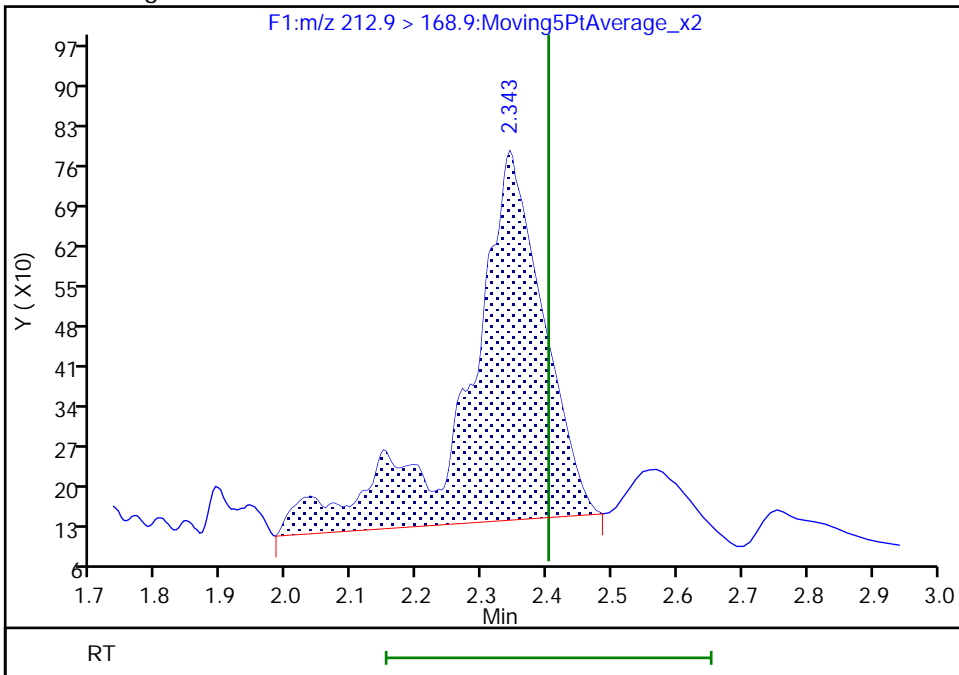
RT: 2.34
Area: 4735
Amount: 3.492027
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 5381
Amount: 3.994428
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:52:28
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

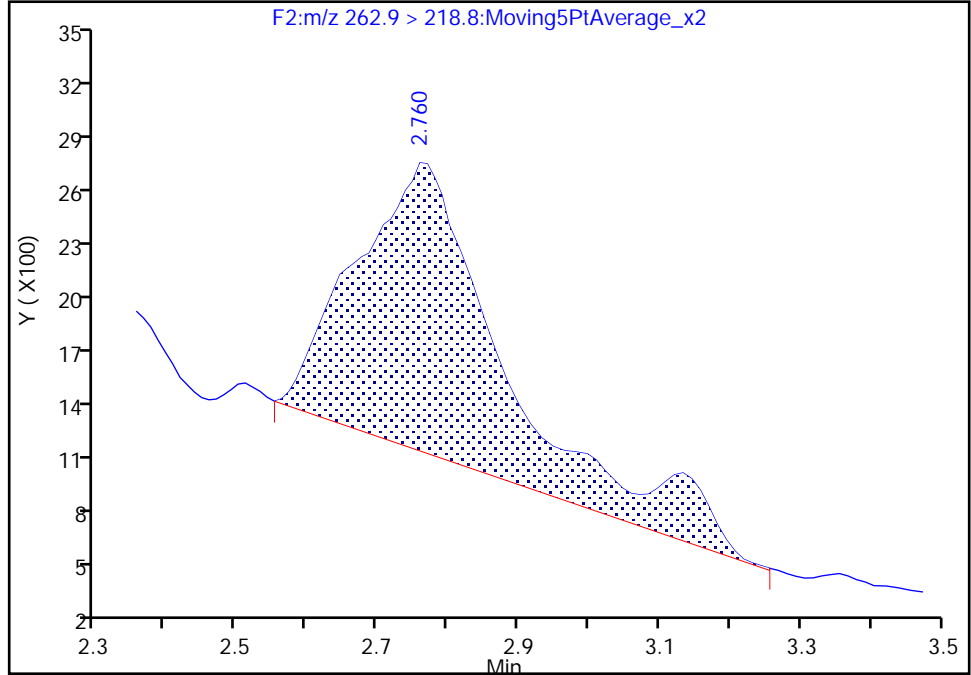
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

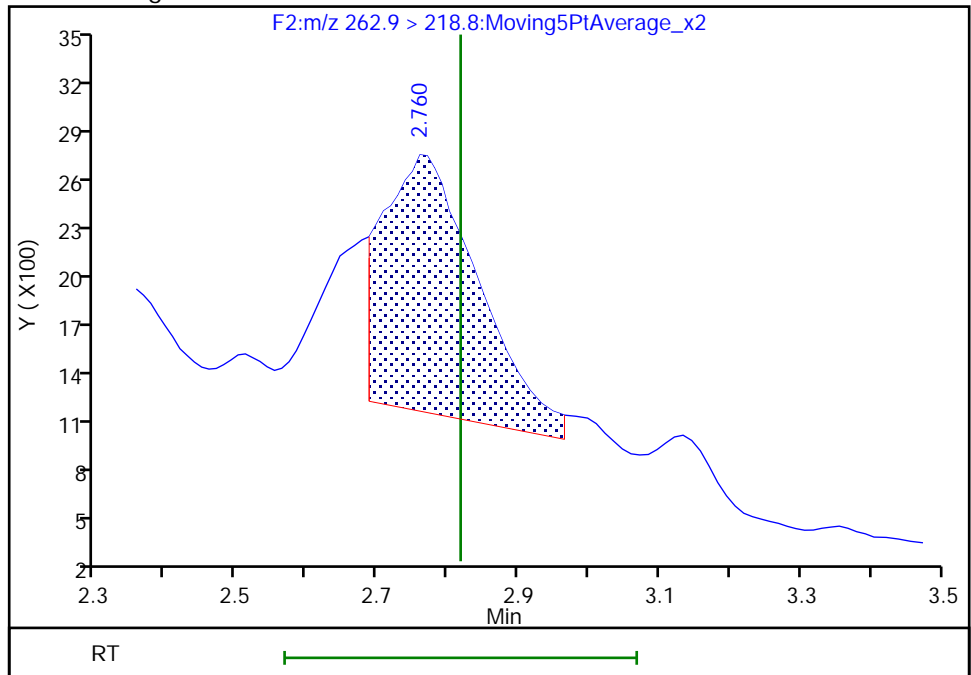
RT: 2.76
Area: 23515
Amount: 8.399342
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 14751
Amount: 5.268922
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:52:41
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

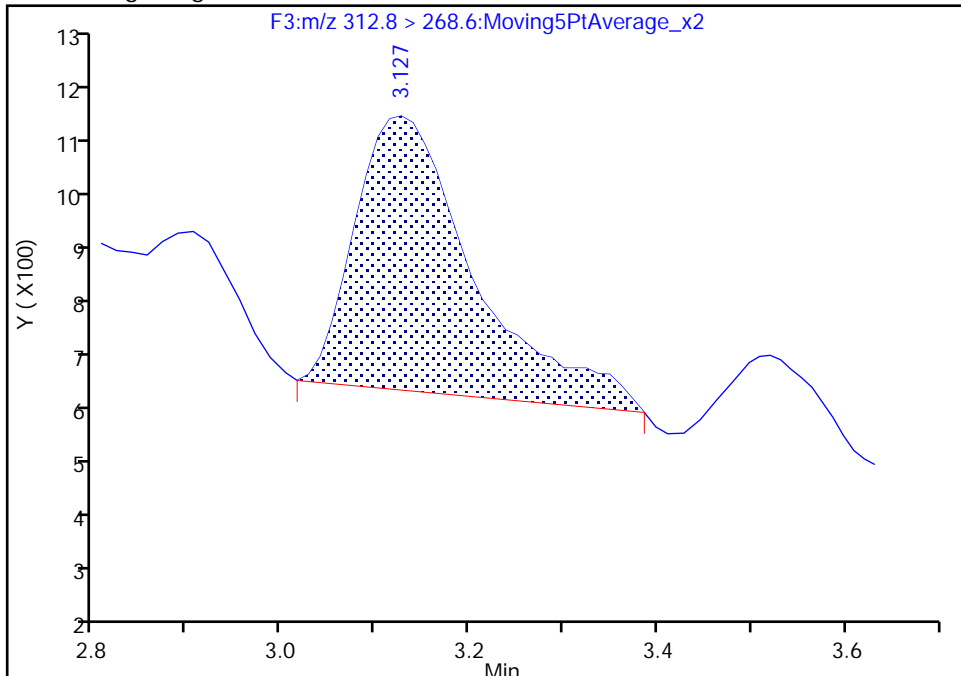
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

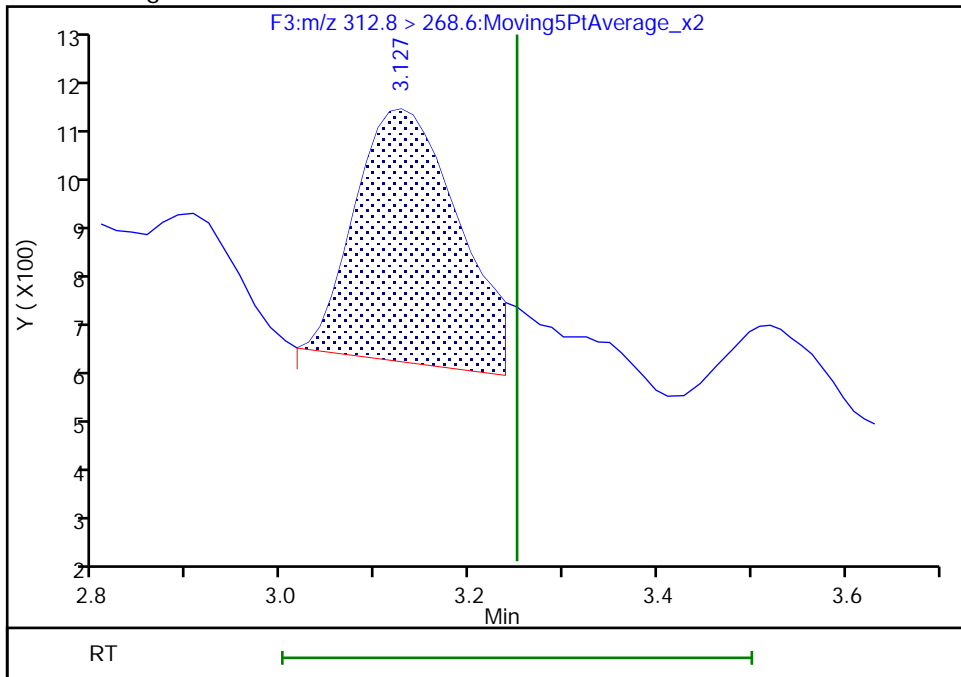
RT: 3.13
Area: 4307
Amount: 1.976727
Amount Units: ng/ml

Processing Integration Results



RT: 3.13
Area: 3816
Amount: 1.751379
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:53:06
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

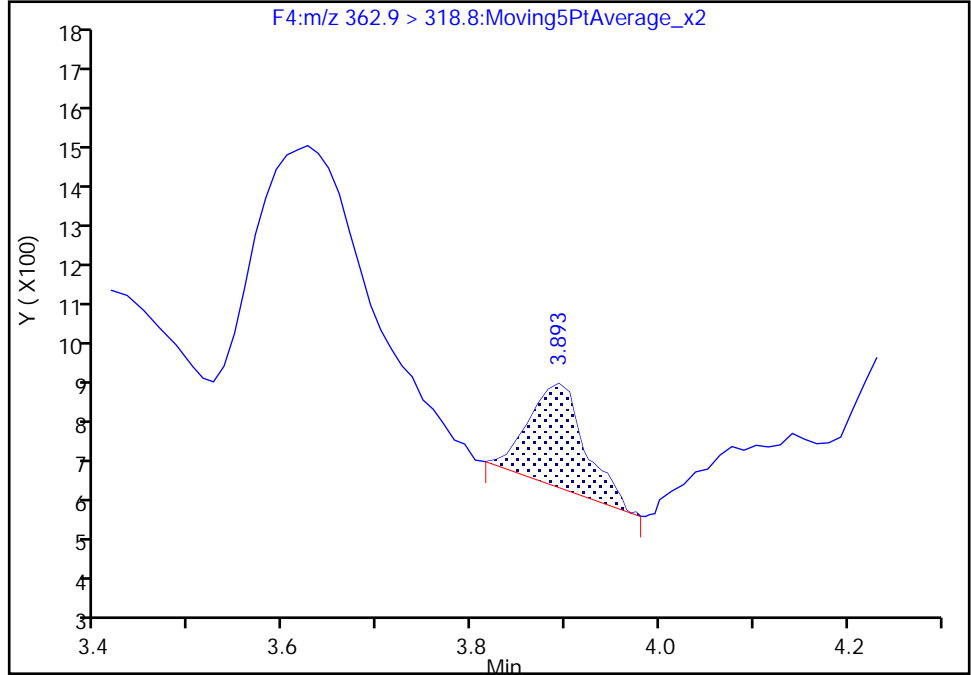
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

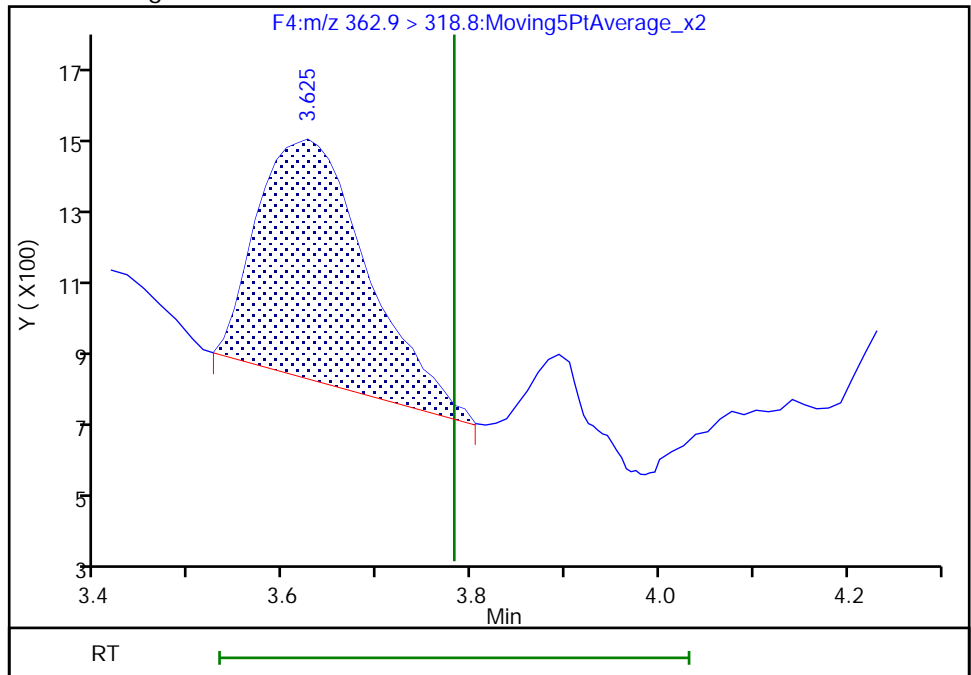
RT: 3.89
Area: 1052
Amount: 0.182661
Amount Units: ng/ml

Processing Integration Results



RT: 3.63
Area: 5268
Amount: 0.914694
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

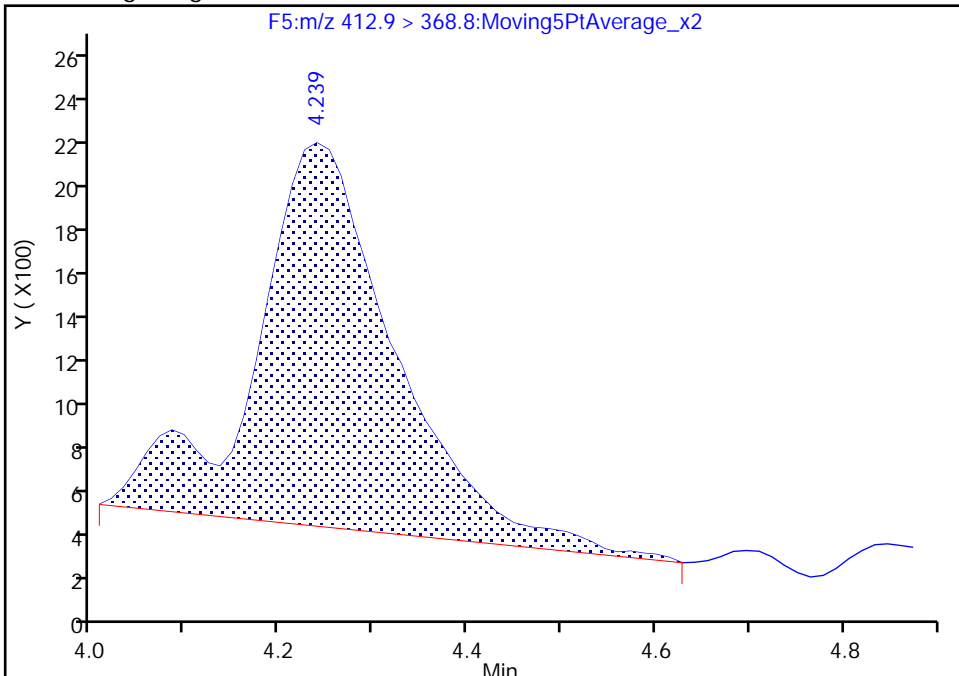
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

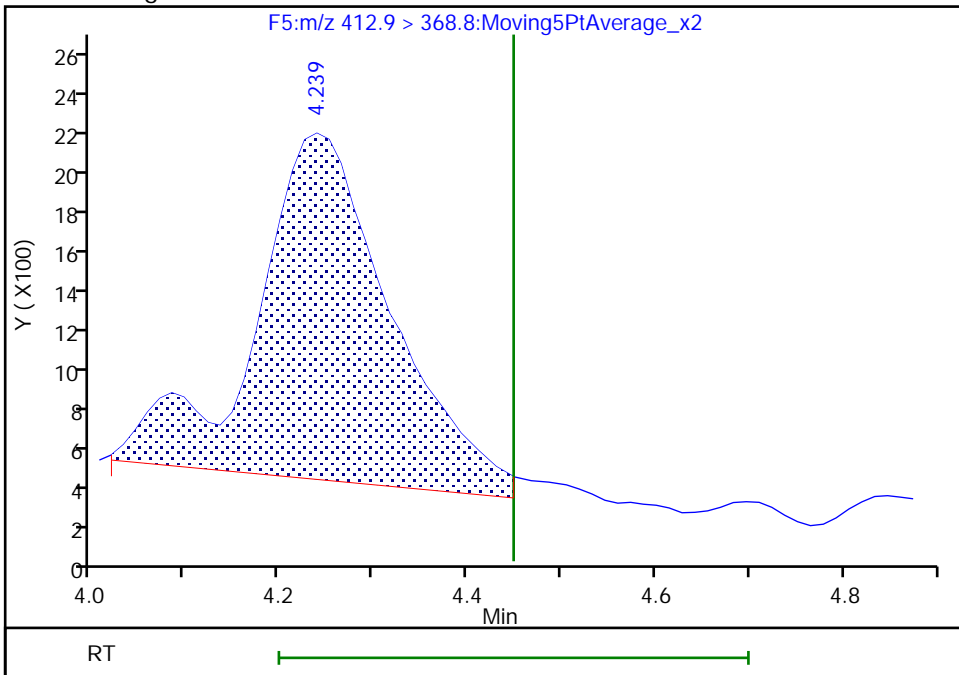
RT: 4.24
Area: 17312
Amount: 3.023622
Amount Units: ng/ml

Processing Integration Results



RT: 4.24
Area: 16830
Amount: 2.939439
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:53:21
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

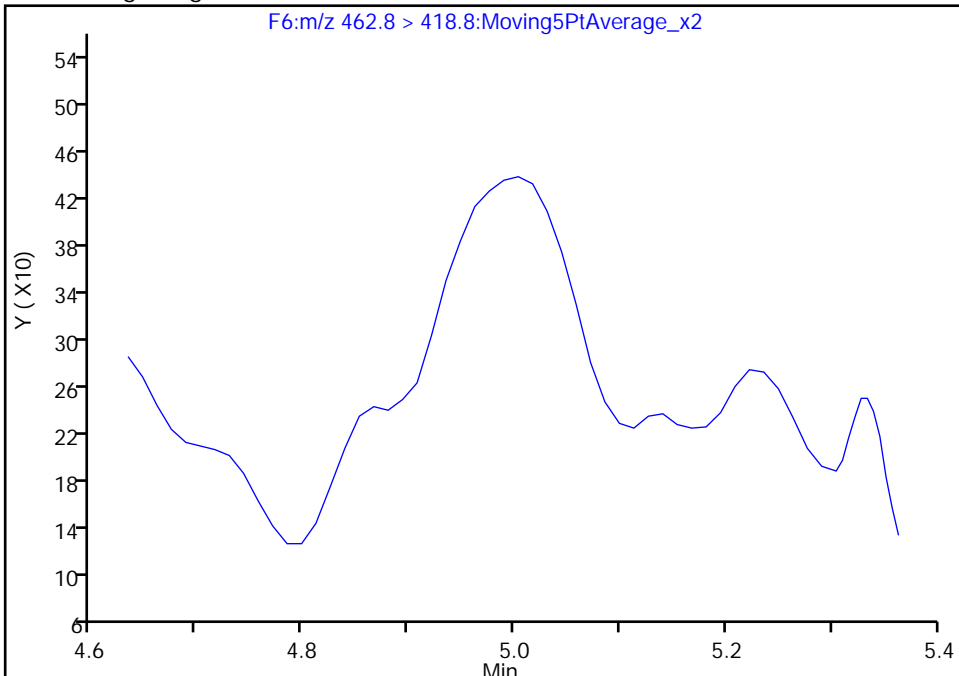
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

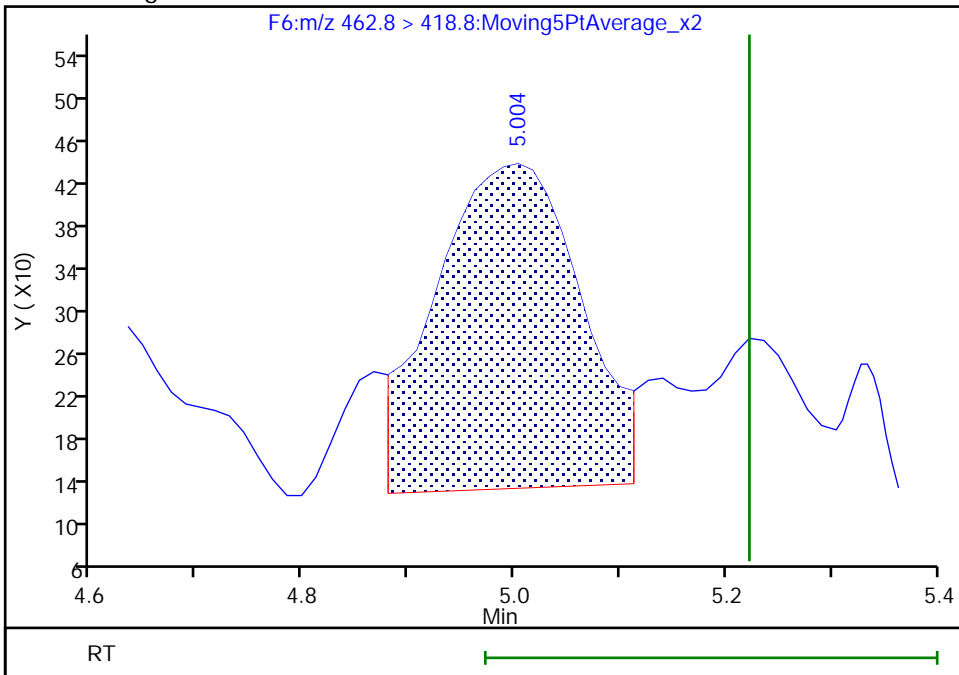
Not Detected
Expected RT: 5.22

Processing Integration Results



Manual Integration Results

RT: 5.00
Area: 2865
Amount: 0.300120
Amount Units: ng/ml



TestAmerica Burlington

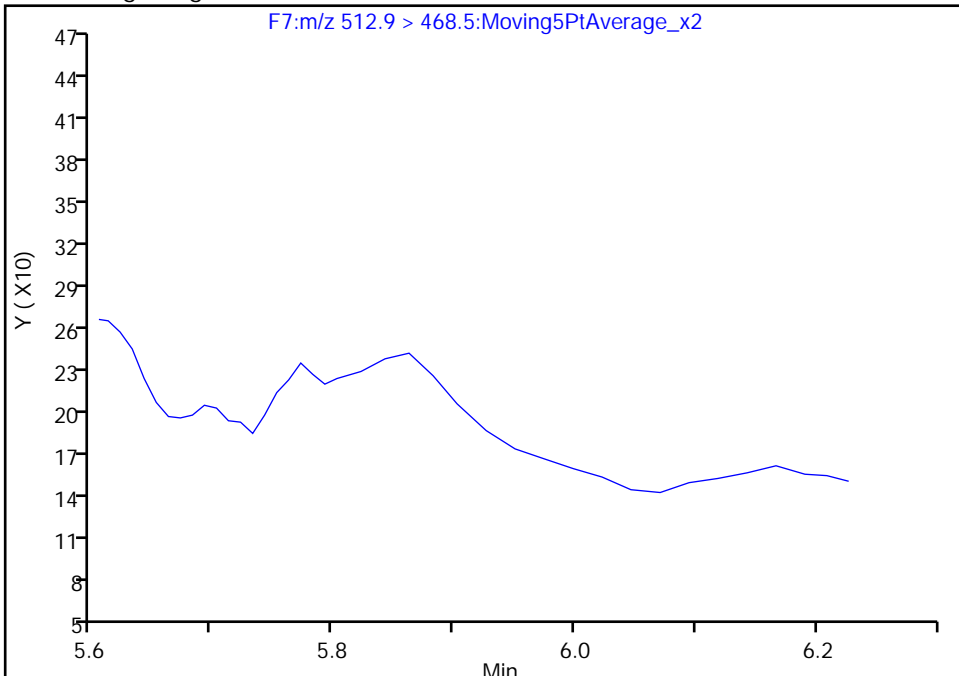
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

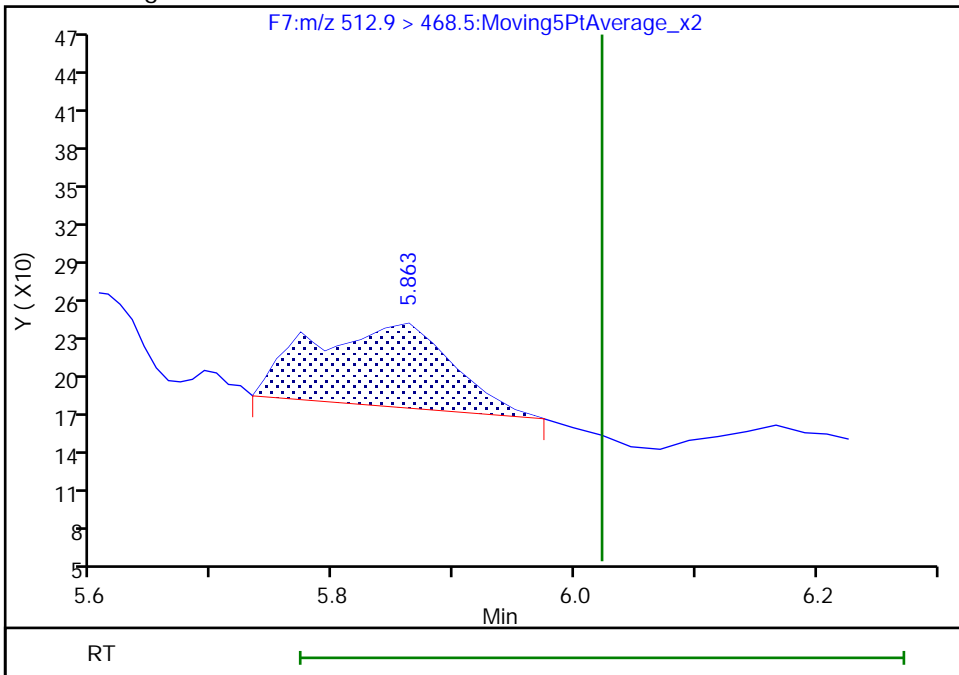
Not Detected
Expected RT: 6.02

Processing Integration Results



Manual Integration Results

RT: 5.86
Area: 523
Amount: 0.047562
Amount Units: ng/ml



TestAmerica Burlington

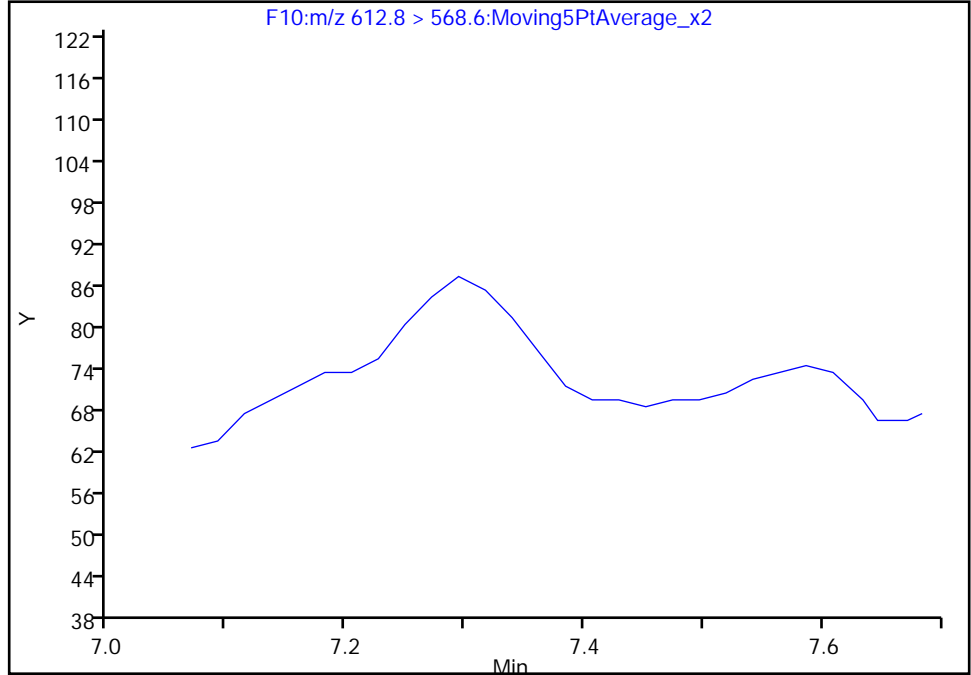
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:M/RM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

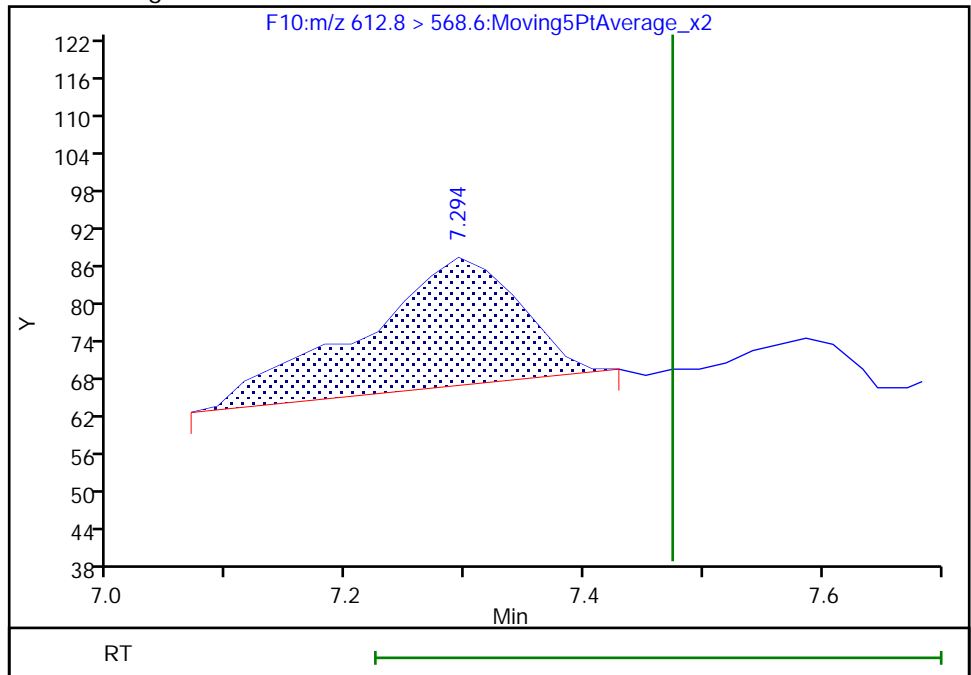
Not Detected
Expected RT: 7.47

Processing Integration Results



RT: 7.29
Area: 190
Amount: 0.016134
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:54:01
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

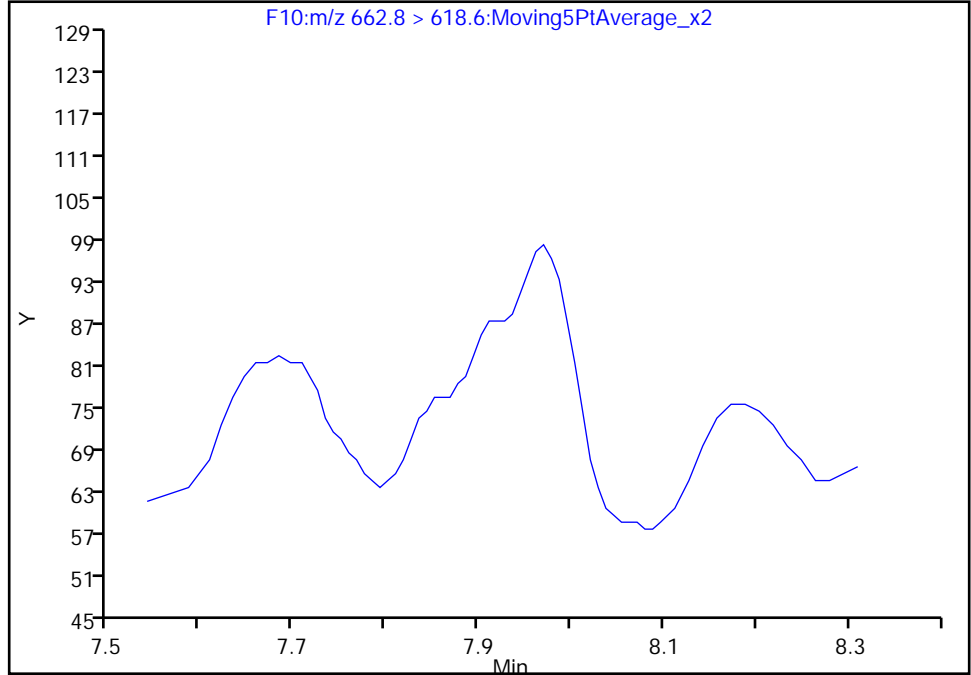
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:M/RM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

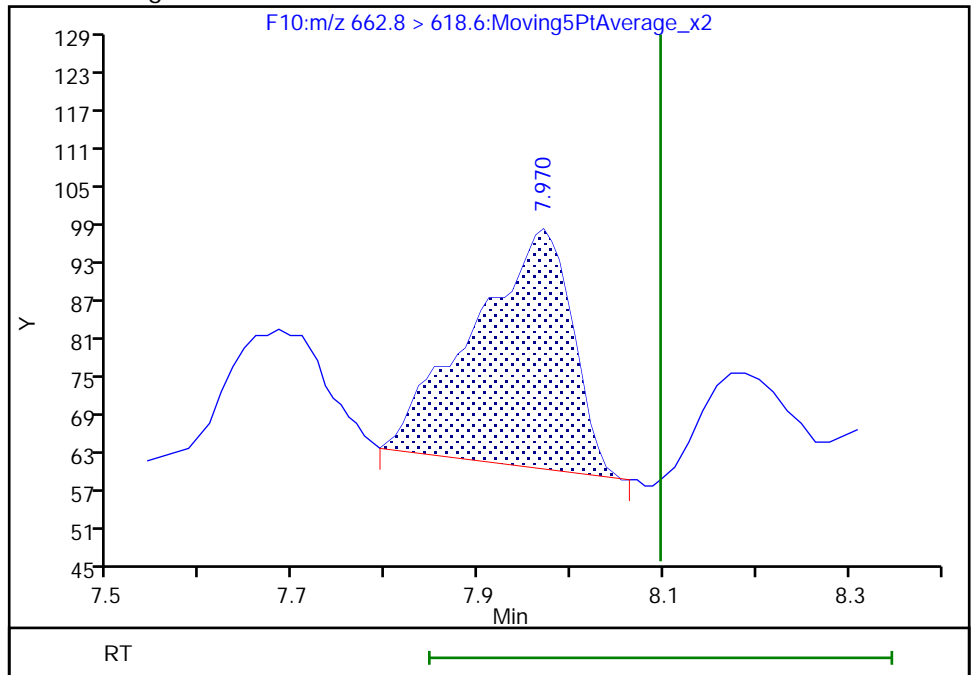
Not Detected
Expected RT: 8.10

Processing Integration Results



Manual Integration Results

RT: 7.97
Area: 281
Amount: 0.021875
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:53:58
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

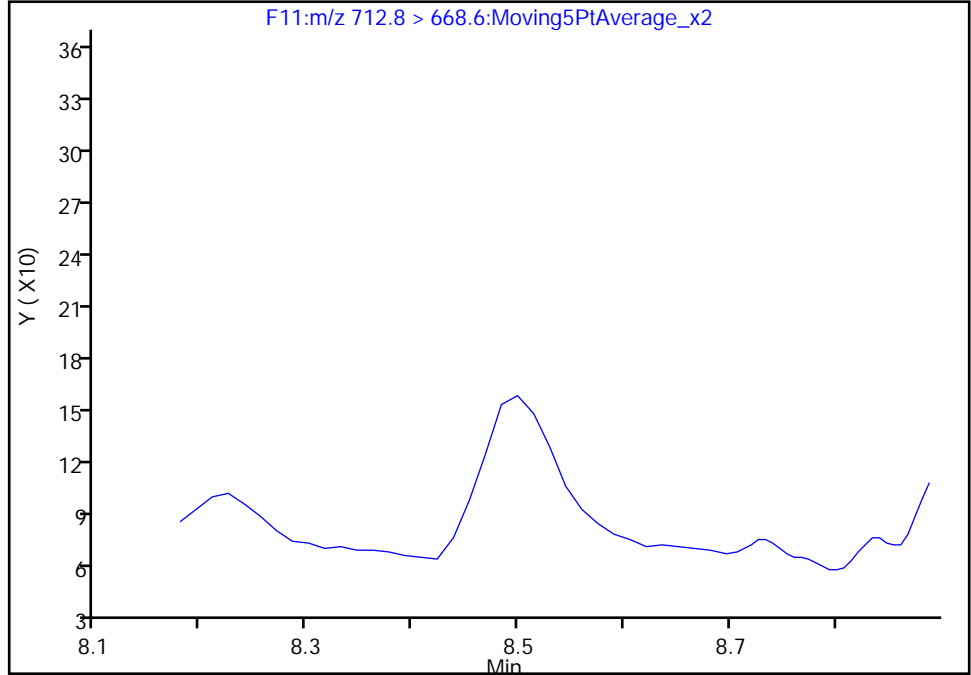
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

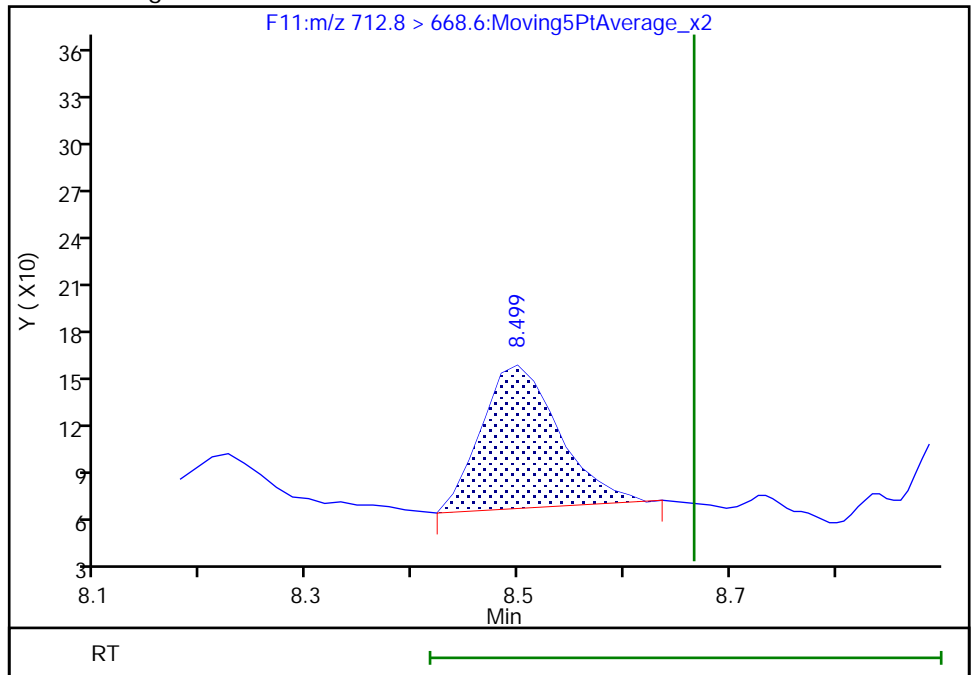
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.50
Area: 453
Amount: 0.035362
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:53:54
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

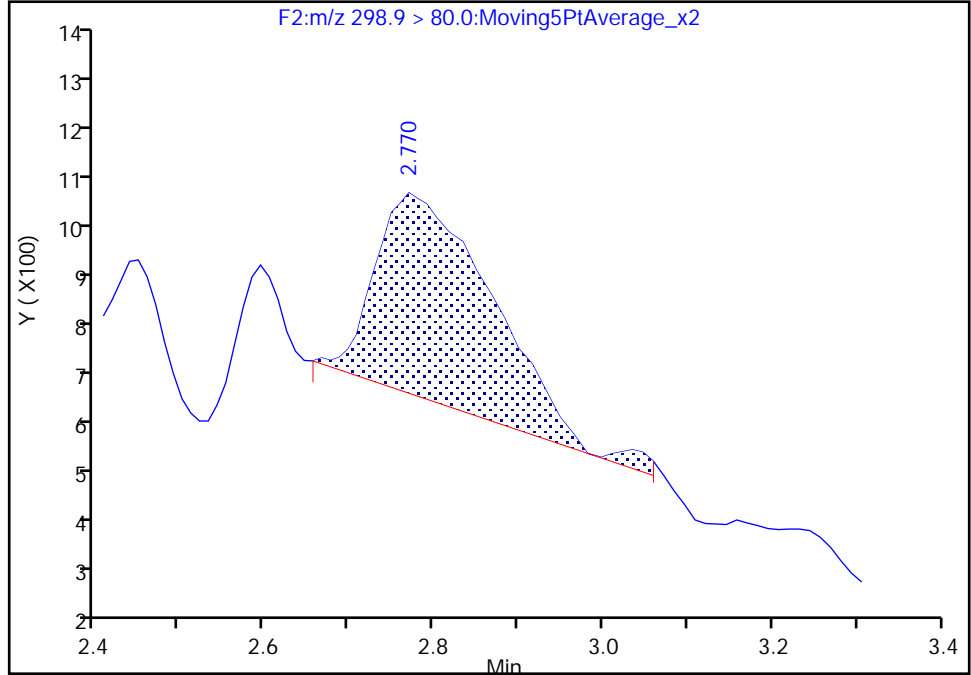
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

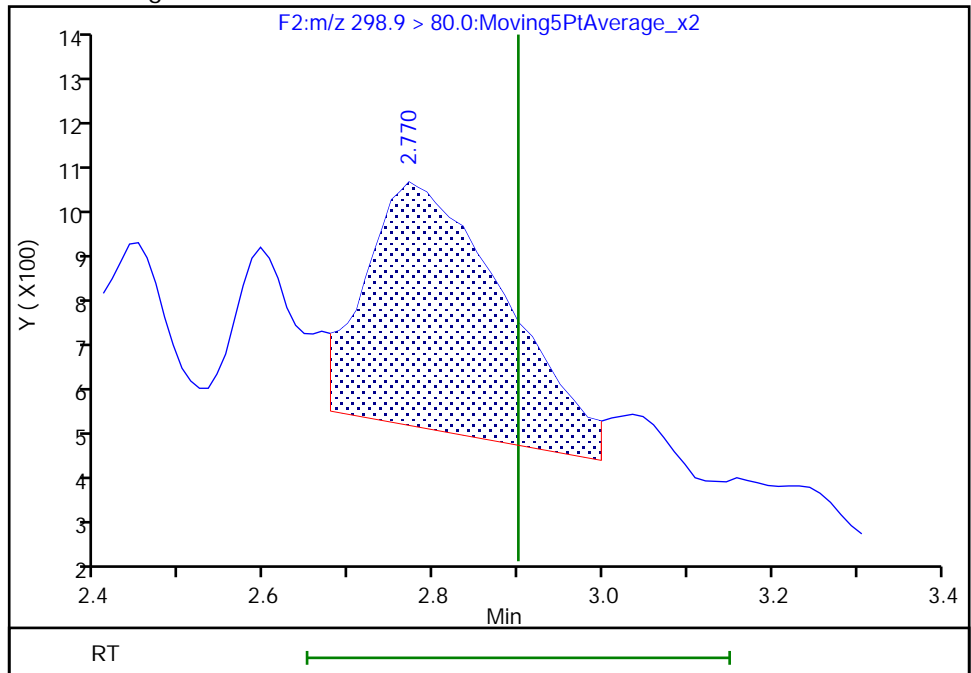
RT: 2.77
Area: 3965
Amount: 1.289213
Amount Units: ng/ml

Processing Integration Results



RT: 2.77
Area: 6179
Amount: 2.009091
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

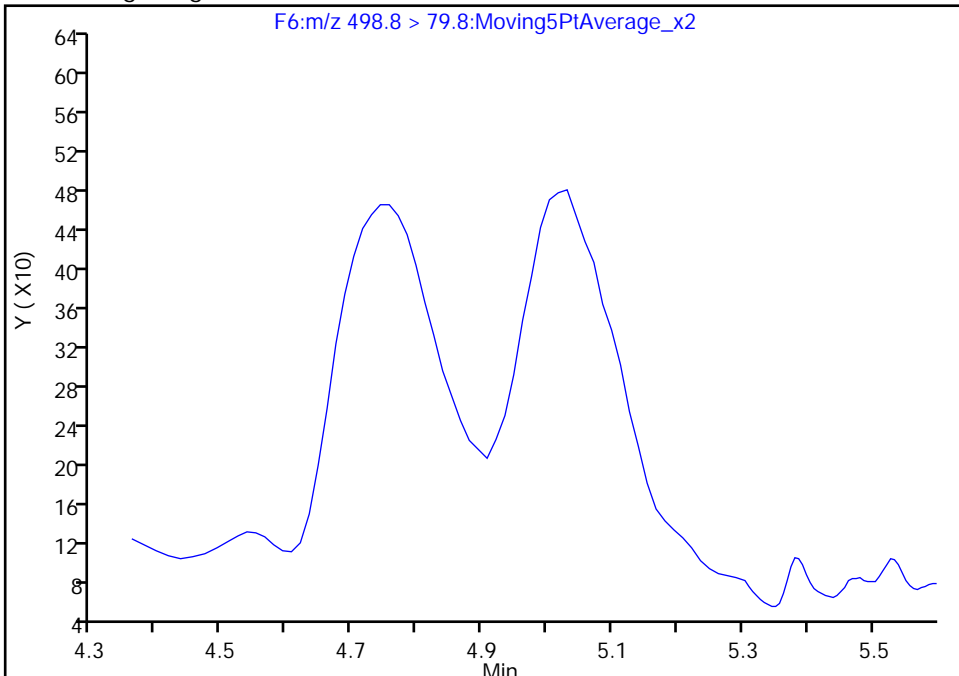
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

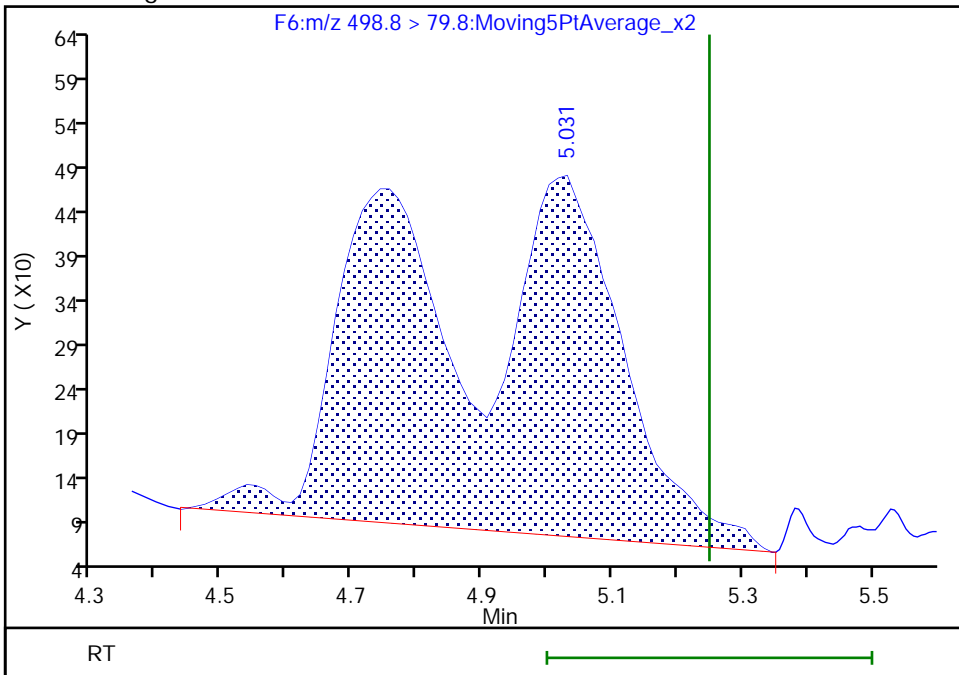
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 5.03
Area: 8859
Amount: 2.972625
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:54:24
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

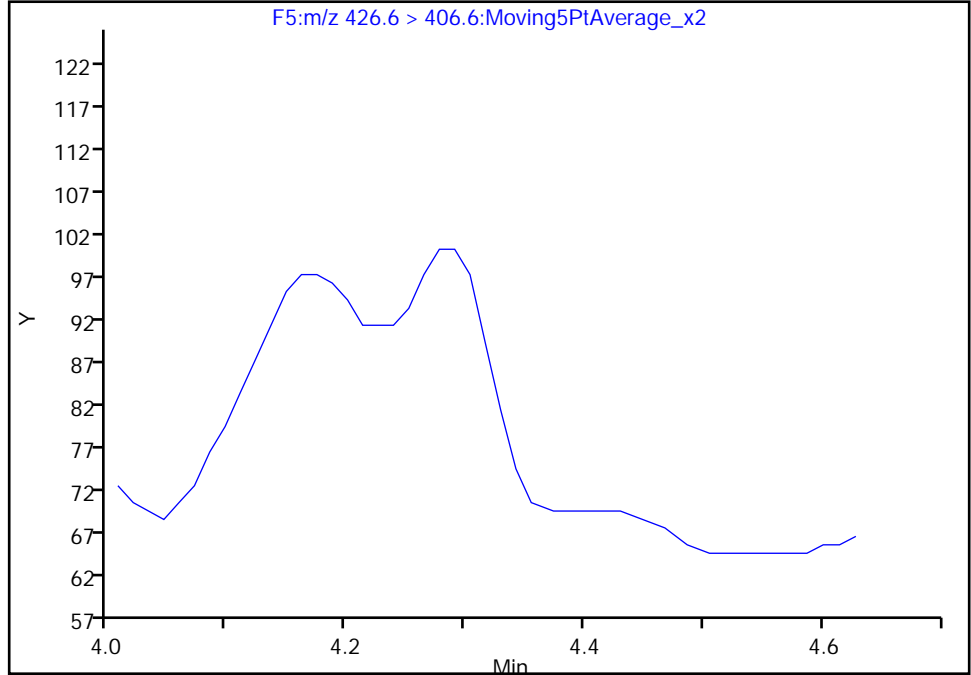
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

14 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

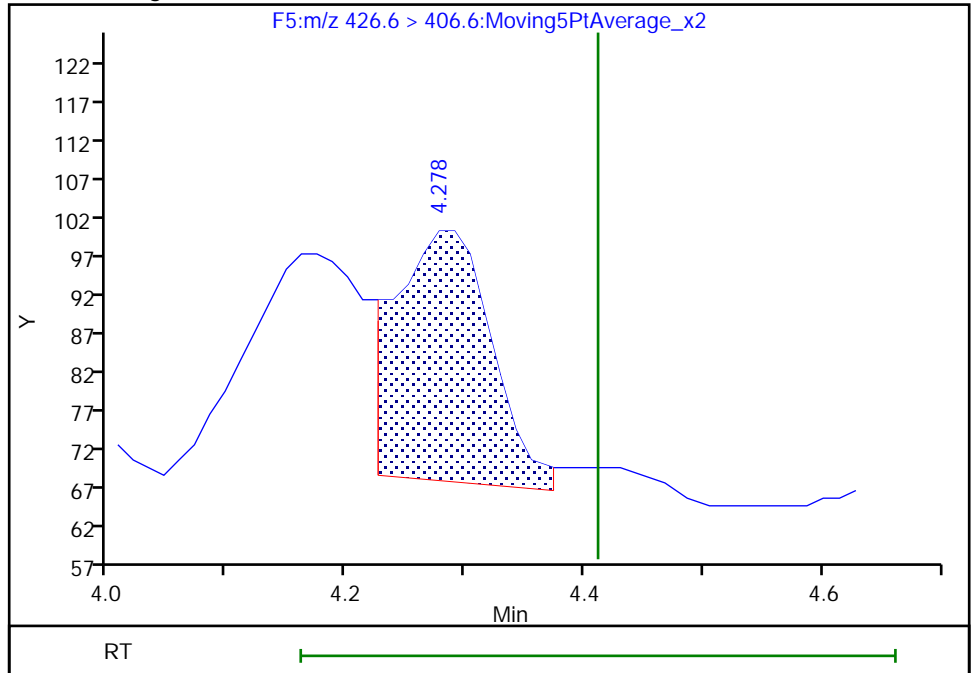
Not Detected
Expected RT: 4.41

Processing Integration Results



RT: 4.28
Area: 182
Amount: 0.076181
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:55:01
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

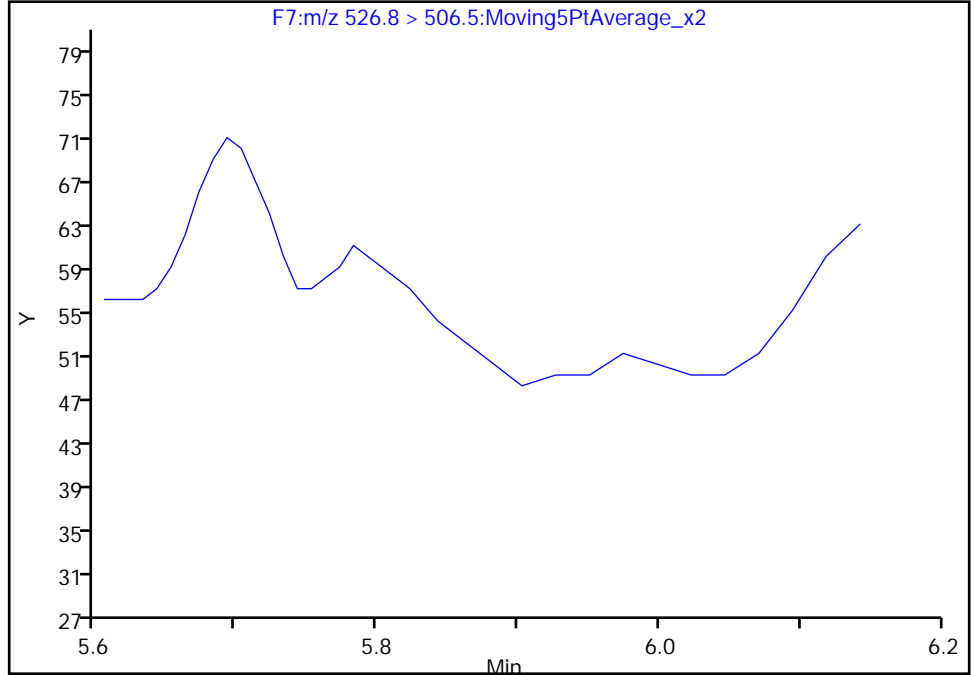
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Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

23 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

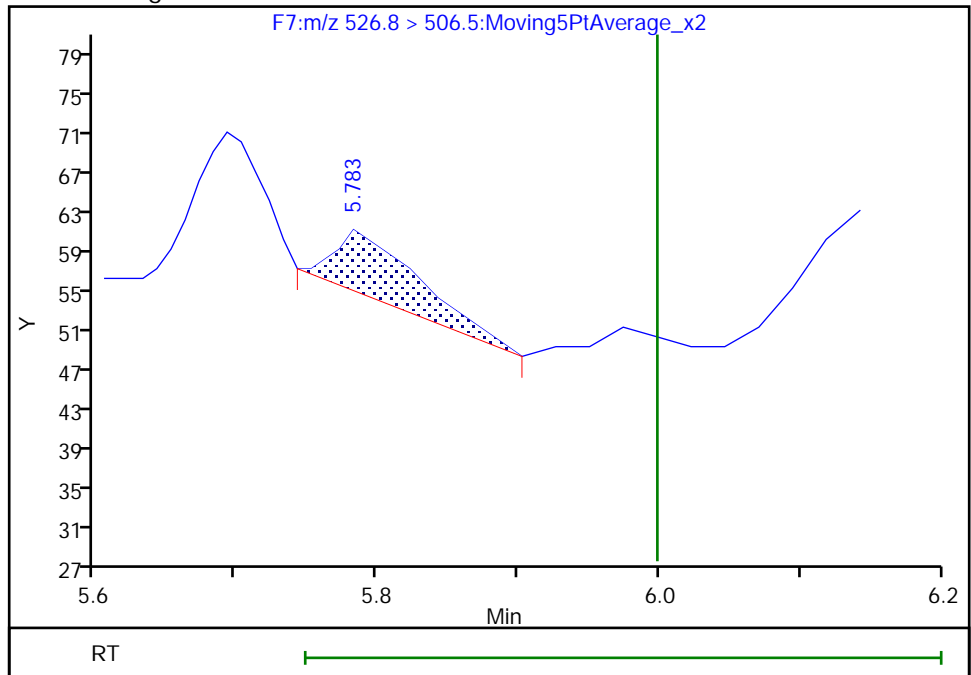
Not Detected
Expected RT: 6.00

Processing Integration Results



Manual Integration Results

RT: 5.78
Area: 27
Amount: 0.006494
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:54:17
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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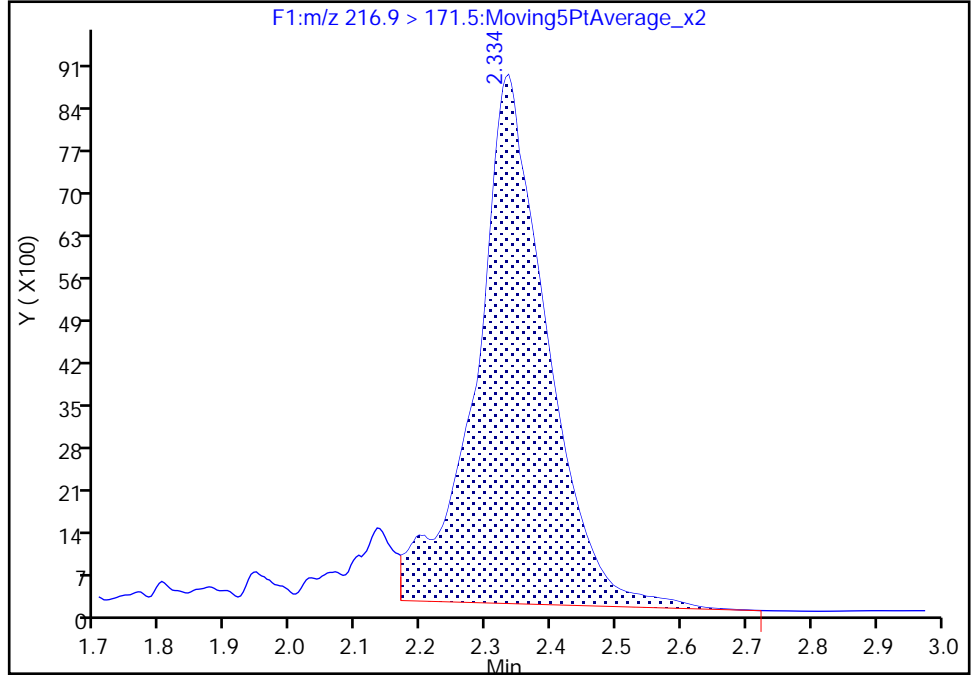
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

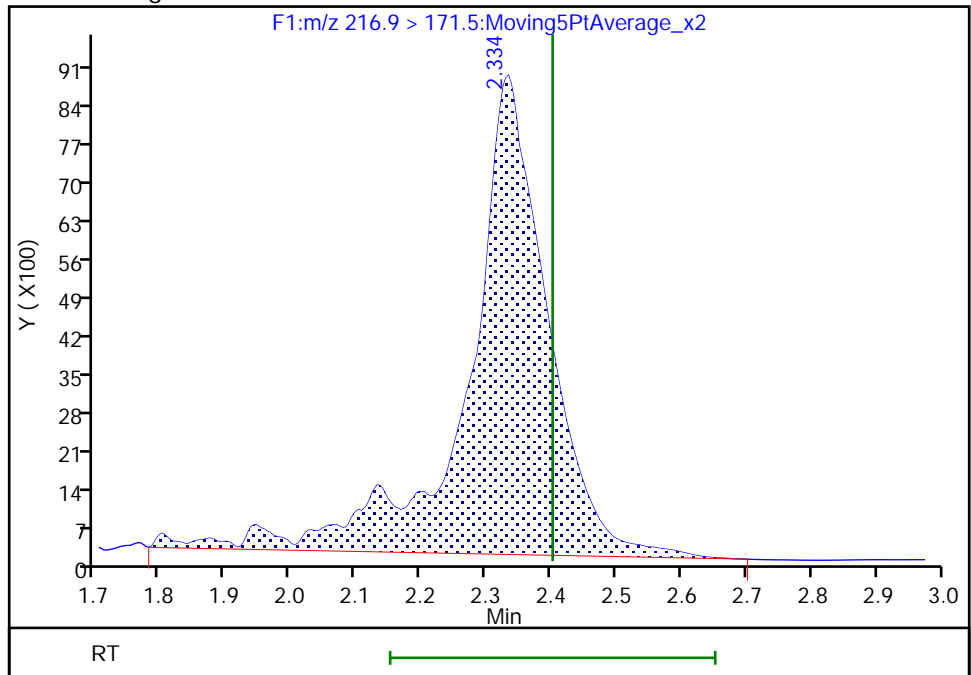
RT: 2.33
Area: 66692
Amount: 14.247027
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 75881
Amount: 16.210019
Amount Units: ng/ml

Manual Integration Results



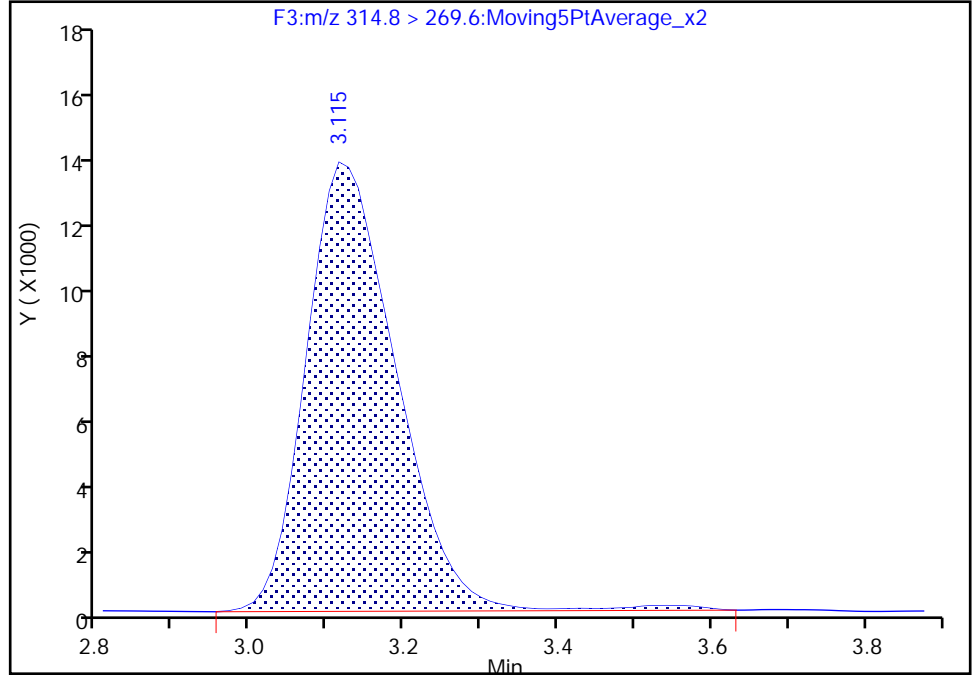
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

D 7 13C2 PFHxA, CAS: STL00993
Signal: 1

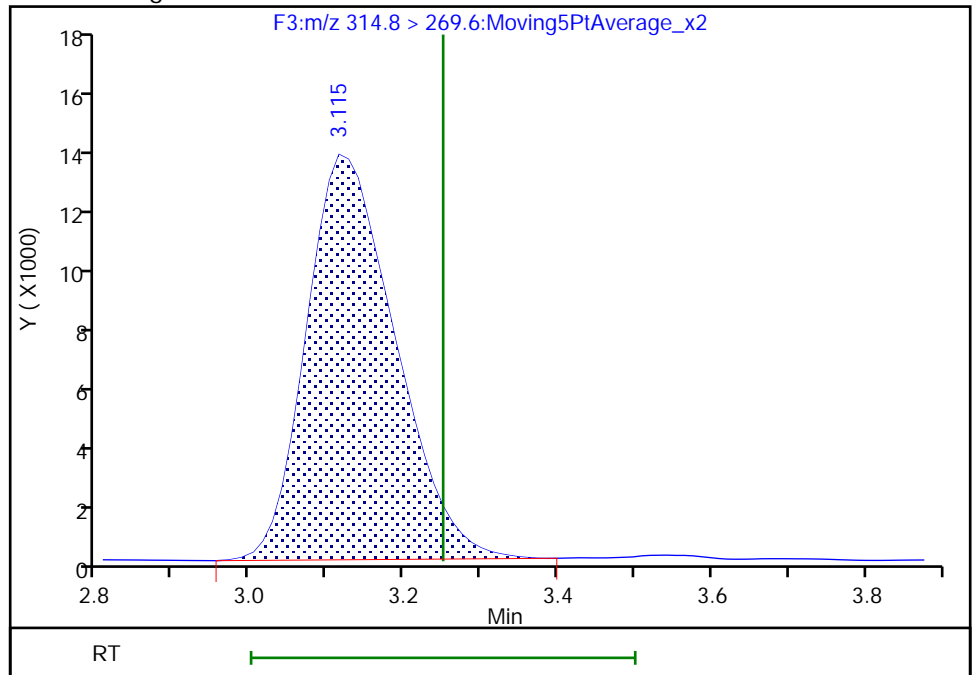
RT: 3.12
Area: 106726
Amount: 19.961526
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 105000
Amount: 19.638704
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:52:59
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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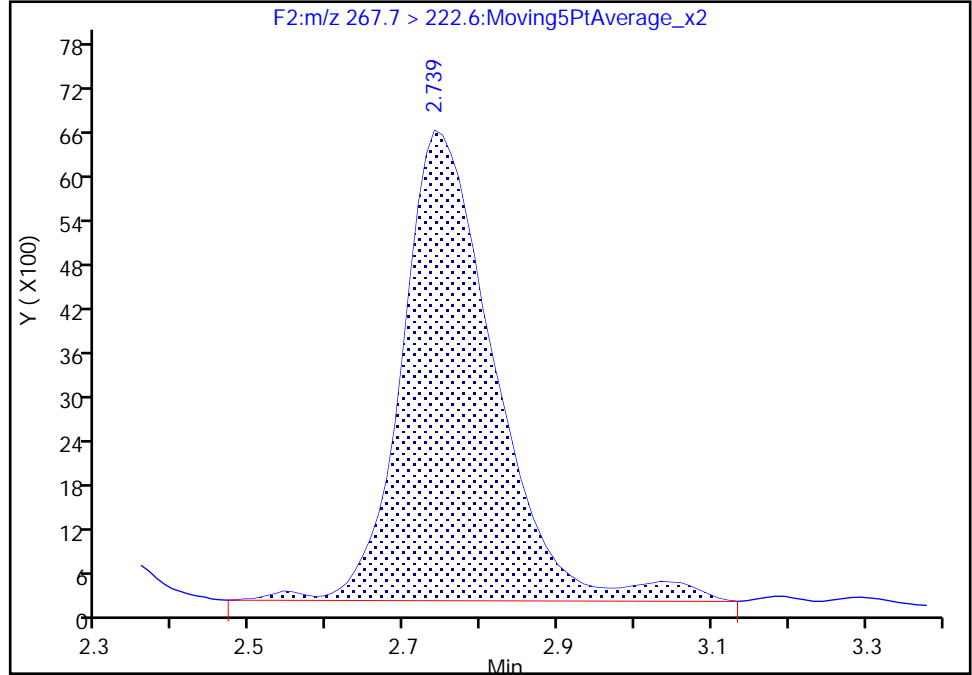
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A75.d
Injection Date: 08-Jan-2019 12:49:16 Instrument ID: LC410
Lims ID: 480-147040-A-6-A Lab Sample ID: 200-147040-6
Client ID: FD-01-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 75
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 3 13C5 PFPeA, CAS: STL01893
Signal: 1

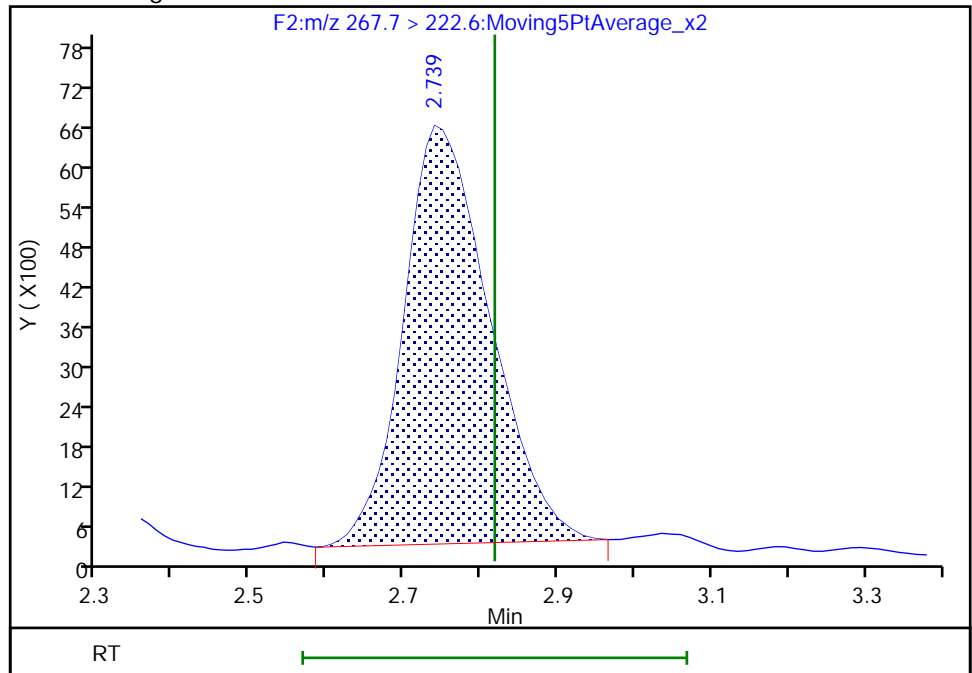
RT: 2.74
Area: 53799
Amount: 18.128749
Amount Units: ng/ml

Processing Integration Results



RT: 2.74
Area: 49152
Amount: 16.562841
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:52:32
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 480-147040-1 Analy Batch No.: 135376

SDG No.: _____

Instrument ID: LC410 GC Column: C-18 ID: 4.6 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 13:20 Calibration End Date: 10/17/2018 15:27 Calibration ID: 40218

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-135376/6	PF101718A06.d
Level 2	IC 200-135376/7	PF101718A07.d
Level 3	IC 200-135376/8	PF101718A08.d
Level 4	IC 200-135376/9	PF101718A09.d
Level 5	ICIS 200-135376/10	PF101718A10.d
Level 6	IC 200-135376/11	PF101718A11.d
Level 7	IC 200-135376/12	PF101718A12.d
Level 8	IC 200-135376/13	PF101718A13.d
Level 9	IC 200-135376/14	PF101718A14.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8	LVL 9													
Perfluorobutanoic acid (PFBA)	1.0429 0.8301	0.8545 0.8468	0.9302 0.8535	0.8729 0.8489	0.8551	L1ID	0.1613	0.8473						1.0000		0.9900	
Perfluoropentanoic acid (PFPeA)	2.9647 2.6935	2.9741 2.7266	2.9358 2.6809	2.9571 2.8601	2.8385	AveID		2.8479			4.2		35.0				
Perfluorobutanesulfonic acid (PFBS)	1.6200 1.7337	1.7728 1.7024	1.9127 1.7343	1.7625 1.8359	1.6308	AveID		1.7450			5.3		35.0				
Perfluorohexanoic acid (PFHxA)	1.0153 1.0163	1.0167 1.0323	1.0124 1.0376	1.0572 1.1034	1.0466	AveID		1.0375			2.8		35.0				
Perfluoroheptanoic acid (PFHpA)	0.9018 0.9452	0.9661 1.0015	0.9853 0.9927	0.9924 1.0481	0.9641	AveID		0.9775			4.1		35.0				
Perfluorohexanesulfonic acid (PFHxS)	2.0008 1.5678	1.7094 1.4866	1.5826 1.5036	1.4513 1.5446	1.5404	L1ID	0.3609	1.5216						1.0000		0.9900	
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	++++ 0.9381	++++ 0.9781	1.1801 0.9224	1.0613 0.8061	1.0056	AveID		0.9845			11.9		35.0				
Perfluorooctanoic acid (PFOA)	1.0546 0.9621	0.9402 0.9791	1.0459 1.0225	0.9427 0.9869	0.9751	AveID		0.9899			4.3		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	0.9904 0.9433	0.8892 1.0019	0.9979 0.9461	0.9478 0.9942	0.8814	AveID		0.9547			4.8		50.0				
Perfluorononanoic acid (PFNA)	1.4623 0.9593	1.2373 1.0066	1.1625 0.9916	1.0038 1.0659	1.0043	AveID		1.0993			14.9		35.0				
Perfluorooctanesulfonic acid (PFOS)	0.9240 1.0186	0.9354 1.0894	0.9906 1.0666	1.0346 1.2057	1.0385	AveID		1.0337			8.2		35.0				
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	++++ 0.8729	++++ 0.8432	0.7851 0.7713	0.9406 0.7090	0.7254	AveID		0.8068			10.3		35.0				
Perfluorodecanoic acid (PFDA)	1.1486 1.0256	0.9379 1.0352	0.9864 1.0009	0.9770 1.0331	0.9406	AveID		1.0095			6.3		35.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington

Job No.: 480-147040-1

Analy Batch No.: 135376

SDG No.: _____

Instrument ID: LC410

GC Column: C-18

ID: 4.6 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 13:20

Calibration End Date: 10/17/2018 15:27

Calibration ID: 40218

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8	LVL 9													
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.1476	1.0854	1.1040	1.0911	1.0781	AveID		1.0859			3.4		35.0				
	1.1287	1.0380	1.0406	1.0595													
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	++++	++++	0.9878	0.9121	0.9890	AveID		0.9627			2.7		35.0				
	0.9720	0.9661	0.9628	0.9490													
Perfluorodecanesulfonic acid (PFDS)	0.9421	1.0323	1.0696	1.0540	1.0075	AveID		1.0461			5.0		50.0				
	1.0555	1.1291	1.0405	1.0841													
Perfluoroundecanoic acid (PFUnA)	0.9580	1.1095	1.0477	1.0305	0.9913	AveID		1.0259			4.1		35.0				
	1.0136	1.0380	1.0064	1.0381													
Perfluorooctanesulfonamide (PFOSA)	0.7971	0.7904	0.8477	0.8769	0.8607	AveID		0.8462			4.2		35.0				
	0.8160	0.8750	0.8759	0.8757													
Perfluorododecanoic acid (PFDoA)	0.8785	0.8352	0.8703	0.8845	0.8380	AveID		0.8584			2.2		35.0				
	0.8507	0.8571	0.8731	0.8384													
Perfluorotridecanoic acid (PFTriA)	0.9557	0.9997	1.0086	0.9722	0.9809	AveID		0.9775			2.0		50.0				
	0.9817	0.9611	0.9875	0.9498													
Perfluorotetradecanoic acid (PFTeA)	0.9721	1.0046	1.0316	0.9692	0.9344	AveID		0.9748			3.0		35.0				
	0.9537	0.9573	0.9847	0.9654													
13C4 PFBA	0.5621	0.6056	0.5395	0.5100	0.5634	Ave		0.5875			8.3		30.0				
	0.6189	0.5893	0.6306	0.6682													
13C5 PFPeA	0.3691	0.3760	0.3463	0.3262	0.3592	Ave		0.3725			7.0		30.0				
	0.3977	0.3762	0.4093	0.3921													
13C3 PFBS	0.2794	0.3162	0.2738	0.2731	0.3227	Ave		0.3075			8.4		30.0				
	0.3190	0.3112	0.3433	0.3285													
13C2 PFHxA	0.6503	0.6933	0.6731	0.6248	0.6594	Ave		0.6710			4.3		30.0				
	0.7271	0.6713	0.6821	0.6579													
13C4 PFHpA	1.2431	1.2564	1.2628	1.1256	1.2617	Ave		1.2291			3.8		30.0				
	1.2753	1.2196	1.2278	1.1892													
18O2 PFHxS	0.3376	0.3486	0.3512	0.3201	0.3535	Ave		0.3555			6.6		30.0				
	0.3535	0.3506	0.3938	0.3909													
M2-6:2 FTS	0.0986	0.0996	0.0923	0.0887	0.1059	Ave		0.1097			19.0		30.0				
	0.1138	0.1080	0.1222	0.1579													
13C4 PFOA	0.9386	0.9852	0.9450	0.8758	0.9531	Ave		0.9383			3.5		30.0				
	0.9675	0.9206	0.9060	0.9534													
13C5 PFNA	1.2642	1.3067	1.2326	1.1559	1.2807	Ave		1.2654			3.9		30.0				
	1.3311	1.2767	1.2803	1.2609													
13C4 PFOS	0.2865	0.3168	0.3132	0.2809	0.3235	Ave		0.3148			6.5		30.0				
	0.3327	0.3083	0.3401	0.3311													
M2-8:2 FTS	0.2656	0.3093	0.2821	0.2786	0.2991	Ave		0.2971			9.4		30.0				
	0.2867	0.2754	0.3227	0.3545													
13C2 PFDA	1.2707	1.4107	1.3839	1.2518	1.3603	Ave		1.3047			5.0		30.0				
	1.3065	1.2653	1.2627	1.2301													

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Burlington Job No.: 480-147040-1 Analy Batch No.: 135376
 SDG No.: _____
 Instrument ID: LC410 GC Column: C-18 ID: 4.6 (mm) Heated Purge: (Y/N) N
 Calibration Start Date: 10/17/2018 13:20 Calibration End Date: 10/17/2018 15:27 Calibration ID: 40218

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8	LVL 9													
d3-NMeFOSAA	0.2903 0.3201	0.3268 0.3443	0.3113 0.3753	0.2858 0.4242	0.3216	Ave	0.3333				13.0		30.0				
d5-NEtFOSAA	0.2780 0.2867	0.2795 0.2725	0.2835 0.2888	0.2746 0.2994	0.2823	Ave	0.2828				2.9		30.0				
13C2 PFUnA	1.3895 1.4184	1.4344 1.2859	1.4028 1.3238	1.3013 1.2810	1.3849	Ave	1.3580				4.4		30.0				
13C8 FOSA	0.5512 0.6415	0.5875 0.6072	0.5908 0.6487	0.5296 0.6874	0.6130	Ave	0.6063				8.1		30.0				
13C2 PFDcA	1.6087 1.7211	1.6988 1.7363	1.6948 1.7951	1.5240 1.9681	1.7179	Ave	1.7183				7.1		30.0				
13C2 PFTeDA	1.5081 1.5829	1.5979 1.5857	1.5343 1.6386	1.4033 1.7972	1.5425	Ave	1.5767				6.8		30.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 480-147040-1 Analy Batch No.: 135376

SDG No.: _____

Instrument ID: LC410 GC Column: C-18 ID: 4.6 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 13:20 Calibration End Date: 10/17/2018 15:27 Calibration ID: 40218

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 200-135376/6	PF101718A06.d
Level 2	IC 200-135376/7	PF101718A07.d
Level 3	IC 200-135376/8	PF101718A08.d
Level 4	IC 200-135376/9	PF101718A09.d
Level 5	ICIS 200-135376/10	PF101718A10.d
Level 6	IC 200-135376/11	PF101718A11.d
Level 7	IC 200-135376/12	PF101718A12.d
Level 8	IC 200-135376/13	PF101718A13.d
Level 9	IC 200-135376/14	PF101718A14.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7	LVL 8	LVL 9		LVL 6	LVL 7	LVL 8	LVL 9	
Perfluorobutanoic acid (PFBA)		L1ID	12324 317597	22870 527859	62168 1047755	118688 1927671	220914	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluoropentanoic acid (PFPeA)		AveID	23003 662266	49422 1085160	125927 2135896	257221 3810569	467563	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorobutanesulfonic acid (PFBS)		AveID	9516 341905	24774 560395	64865 1158992	128344 2049258	241309	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorohexanoic acid (PFHxA)		AveID	13880 456836	31150 733096	84410 1377885	176119 2467003	316464	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluoroheptanoic acid (PFHpA)		AveID	23568 745215	53644 1292036	154111 2372623	297831 4235283	557789	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorohexanesulfonic acid (PFHxS)		L1ID	14202 342568	26334 551375	68847 1152538	123878 2051663	249693	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)		AveID	++++ 66022	++++ 111701	13494 219475	25088 432543	48850	++++ 30.0	++++ 50.0	5.00 100	10.0 200	20.0
Perfluorooctanoic acid (PFOA)		AveID	20809 575433	40936 953489	122430 1803420	220137 3197469	426187	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	5966 194023	12449 326805	38707 626455	70999 1118747	130750	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorononanoic acid (PFNA)		AveID	38864 789377	71450 1359420	177481 2471507	309354 4567285	589760	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorooctanesulfonic acid (PFOS)		AveID	5566 209502	13096 355328	38423 706214	77495 1356719	154040	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)		AveID	++++ 154728	++++ 245658	27432 484542	69878 854174	99493	++++ 30.0	++++ 50.0	5.00 100	10.0 200	20.0
Perfluorodecanoic acid (PFDA)		AveID	30684 828327	58471 1385659	169098 2460309	326087 4318588	586742	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	7003 223351	15677 378059	42564 760209	83136 1527415	158990	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington

Job No.: 480-147040-1

Analy Batch No.: 135376

SDG No.: _____

Instrument ID: LC410

GC Column: C-18

ID: 4.6 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 13:20

Calibration End Date: 10/17/2018 15:27

Calibration ID: 40218

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7	LVL 8	LVL 9		LVL 6	LVL 7	LVL 8	LVL 9	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	++++ 172294	++++ 278513	34693 541296	66780 965610	128045	++++ 30.0	++++ 50.0	5.00 100	10.0 200	20.0
Perfluorodecanesulfonic acid (PFDS)		AveID	5675 217089	14452 368285	41490 688953	78955 1219877	149455	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluoroundecanoic acid (PFUnA)		AveID	27985 888797	70336 1412068	182039 2593532	357513 4519201	629524	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorooctanesulfonamide (PFOSA)		AveID	9236 323592	20523 562051	62033 1106058	123818 2045786	241945	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorododecanoic acid (PFDoA)		AveID	29712 905170	62706 1574332	182703 3051169	359390 5607453	660163	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorotridecanoic acid (PFTriA)		AveID	30302 960634	70598 1612219	191672 3150003	363751 5800696	693824	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
Perfluorotetradecanoic acid (PFTeA)		AveID	30821 933224	70942 1605926	196056 3140954	362652 5895673	660889	1.00 30.0	2.00 50.0	5.00 100	10.0 200	20.0
13C4 PFBA	13PF OA	Ave	590841 637703	669118 623368	668312 613765	679847 567698	645885	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C5 PFPeA	13PF OA	Ave	387945 409798	415435 397986	428936 398357	434921 333076	411808	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C3 PFBS	13PF OA	Ave	273141 305671	324907 306130	315382 310742	338617 259525	344027	46.5 46.5	46.5 46.5	46.5 46.5	46.5 46.5	46.5
13C2 PFHxA	13PF OA	Ave	683551 749159	765970 710134	833740 663953	832949 558939	755922	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C4 PFHpA	13PF OA	Ave	1306729 1314020	1388164 1290126	1564164 1195044	1500566 1010258	1446406	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
18O2 PFHxS	13PF OA	Ave	335749 344516	364345 350859	411523 362565	403737 314147	383361	47.3 47.3	47.3 47.3	47.3 47.3	47.3 47.3	47.3
M2-6:2 FTS	13PF OA	Ave	98459 111438	104496 108495	108629 113019	112280 127432	115369	47.5 47.5	47.5 47.5	47.5 47.5	47.5 47.5	47.5
13C4 PFOA	13PF OA	Ave	986590 996848	1088528 973826	1170517 881871	1167546 809948	1092624	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C5 PFNA	13PF OA	Ave	1328865 1371470	1443703 1350557	1526778 1246159	1540942 1071206	1468139	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C4 PFOS	13PF OA	Ave	287930 327712	334603 311818	370825 316504	358054 268942	354522	47.8 47.8	47.8 47.8	47.8 47.8	47.8 47.8	47.8
M2-8:2 FTS	13PF OA	Ave	267461 283037	327367 279105	334752 300907	355854 288539	328510	47.9 47.9	47.9 47.9	47.9 47.9	47.9 47.9	47.9
13C2 PFDA	13PF OA	Ave	1335712 1346103	1558634 1338483	1714210 1229016	1668807 1045034	1559492	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
d3-NMeFOSAA	13PF OA	Ave	305107 329801	361095 364220	385533 365274	380957 360409	368677	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
d5-NEtFOSAA	13PF OA	Ave	292275 295427	308760 288272	351207 281091	366081 254374	323668	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0

FORM VI
 LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Burlington Job No.: 480-147040-1 Analy Batch No.: 135376

SDG No.: _____

Instrument ID: LC410 GC Column: C-18 ID: 4.6 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 13:20 Calibration End Date: 10/17/2018 15:27 Calibration ID: 40218

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7	LVL 8	LVL 9	LVL 5	LVL 6	LVL 7	LVL 8	LVL 9	LVL 5
13C2 PFunA	13PF OA	Ave	1460634 1461436	1584814 1360311	1737587 1288532	1734742 1088312	1587674	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C8 FOSA	13PF OA	Ave	579385 660912	649104 642325	731745 631359	706019 584014	702765	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C2 PFDoA	13PF OA	Ave	1691013 1773342	1876986 1836762	2099298 1747263	2031630 1671991	1969434	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
13C2 PFTeDA	13PF OA	Ave	1585329 1630900	1765426 1677487	1900412 1594870	1870811 1526788	1768278	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0

Curve Type Legend:

Ave = Average ISTD AveID = Average isotope dilution L1ID = Linear 1/conc IsoDil

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 17-Oct-2018 13:20:08 ALS Bottle#: 0 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-006 IC 1
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:11 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 14:44:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.343	2.339	0.004	1.000	590841	47.8		95.7	1045	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.338	2.340	-0.002	0.998	12324	1.04		104	19.4	M
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.760	2.756	0.004	1.000	23003	1.04		104	28.1	M
D 3 13C5 PFPeA										M
267.7 > 222.6	2.760	2.754	0.006	1.000	387945	49.5		99.1	1526	M
D 6 13C3 PFBS										M
302.0 > 79.8	2.818	2.818	0.0	1.000	273141	42.3		90.9	245	M
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.820	-0.002	1.000	9516	0.9284		92.8	108	M
D 7 13C2 PFHxA										M
314.8 > 269.6	3.177	3.172	0.005	1.000	683551	48.5		96.9	2927	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.177	3.174	0.003	1.000	13880	0.9785		97.9	220	
D 9 13C4 PFHpA										M
366.9 > 321.8	3.703	3.702	0.001	1.000	1306729	50.6		101	2229	
10 Perfluoroheptanoic acid										M
362.9 > 318.8	3.715	3.705	0.010	1.003	23568	0.9226		92.3	151	
D 11 18O2 PFHxS										M
402.9 > 83.8	3.748	3.747	0.001	1.000	335749	44.9		95.0	247	
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.748	3.749	-0.001	1.000	14202	1.08		108	123	M
D 13 M2-6:2 FTS										M
428.6 > 408.6	4.330	4.325	0.005	1.000	98459	42.7		89.9	625	
14 1H,1H,2H,2H-perfluorooctanesulfoni										M
426.6 > 406.6	4.355	4.331	0.024	1.006	2220	1.09		109	24.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	986590	50.0		100	2701	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	20809	1.07		107	146	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1051180	50.0			2319	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.411	4.412	-0.001	0.854	5966	1.04		104	78.4	M
D 20 13C5 PFNA										
467.8 > 422.8	5.154	5.140	0.014	1.000	1328865	49.9		99.9	1207	
19 Perfluorononanoic acid										
462.8 > 418.8	5.154	5.142	0.012	1.000	38864	1.33		133	153	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.168	5.162	0.006	1.000	5566	0.8939		89.4	57.5	M
D 22 13C4 PFOS										
502.8 > 79.8	5.168	5.161	0.007	1.000	287930	43.5		91.0	1356	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.902	5.891	0.011	1.000	267461	42.8		89.4	1339	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.902	5.896	0.006	1.000	6667	1.48		148	51.4	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1335712	48.7		97.4	5874	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.926	0.0	1.000	30684	1.14		114	183	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	305107	43.5		87.1	1208	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.295	6.283	0.012	1.003	7003	1.06		106	20.0	M
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.652	6.638	0.014	1.000	292275	49.2		98.3	1087	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.634	6.654	-0.020	0.997	4446	0.7900		79.0	43.0	M
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.688	6.676	0.012	1.294	5675	0.9006		90.1	91.8	
D 32 13C2 PFUnA										
564.8 > 519.8	6.688	6.682	0.006	1.000	1460634	51.2		102	3004	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.688	0.0	1.000	27985	0.9338		93.4	185	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	579385	45.5		90.9	2859	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.959	6.959	0.0	1.000	9236	0.9420		94.2	86.8	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	29712	1.02		102	214	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	1691013	46.8		93.6	1808	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.979	7.979	0.0	0.935	26309	0.9777		97.8	274	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.544	8.520	0.024	1.002	30821	1.00		99.7	229	
712.8 > 168.8	8.529	8.520	0.009	1.000	6457		4.77(0.00-0.00)	99.7	30.7	
712.8 > 218.8	8.514	8.520	-0.006	0.998	2213		13.93(0.00-0.00)	99.7	15.0	
D 40 13C2 PFTeDA										
714.8 > 669.6	8.529	8.516	0.013	1.000	1585329	47.8		95.7	842	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L1_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d

Injection Date: 17-Oct-2018 13:20:08

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

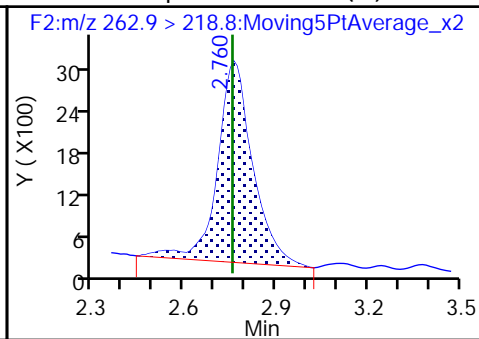
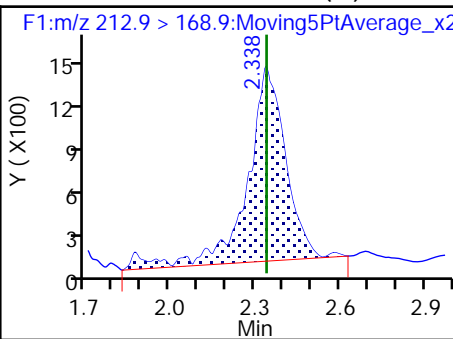
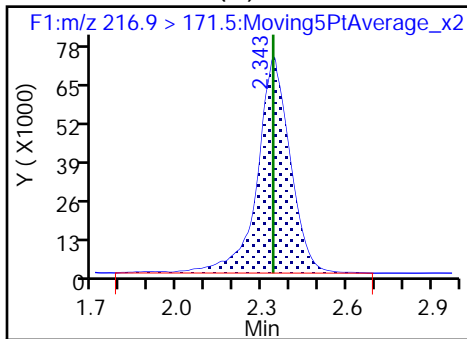
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

4 Perfluoropentanoic acid (M)



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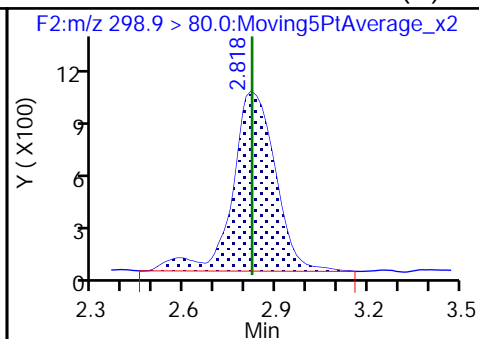
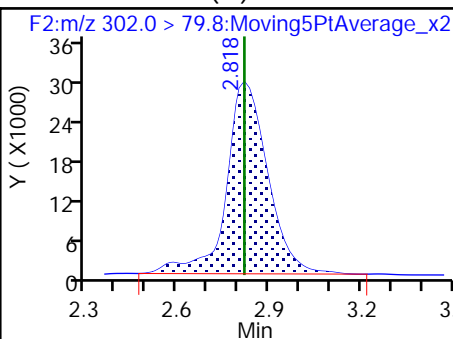
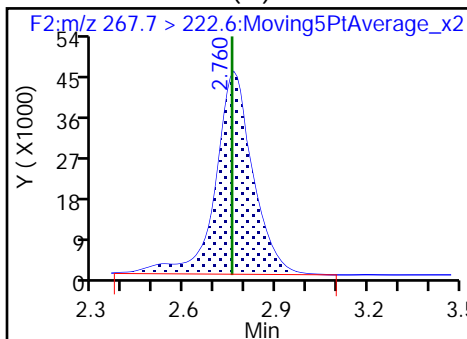
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RT [green bar]

D 3 13C5 PFPeA (M)

D 6 13C3 PFBS (M)

5 Perfluorobutanesulfonic acid (M)



RT [green bar]

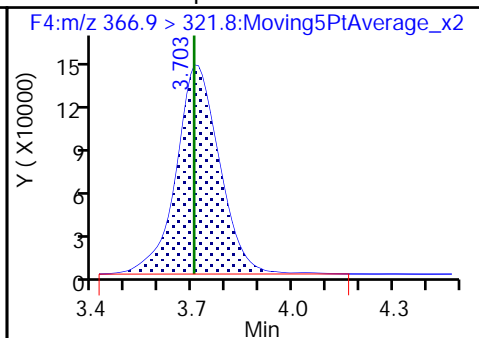
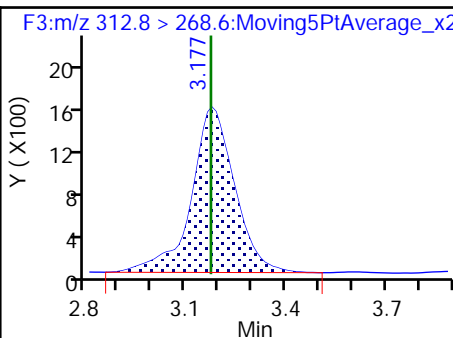
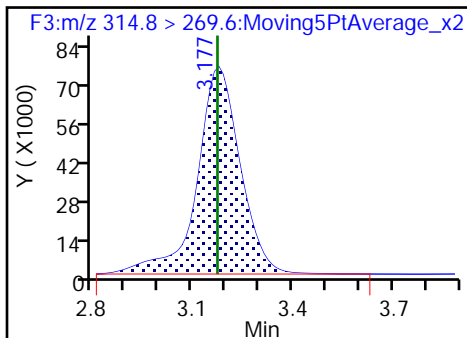
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RT [green bar]

D 7 13C2 PFHxA

8 Perfluorohexanoic acid

D 9 13C4 PFHpA



RT [green bar]

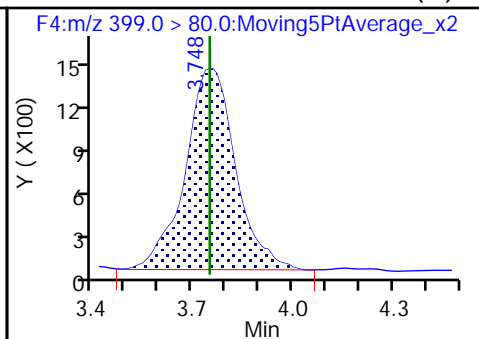
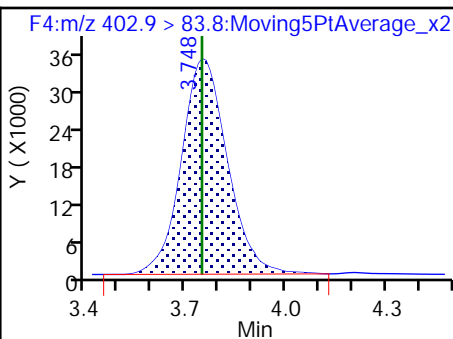
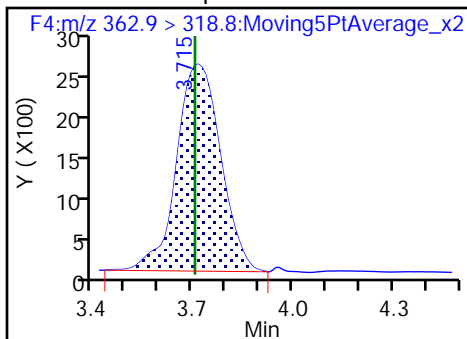
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RT [green bar]

10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

12 Perfluorohexanesulfonic acid (M)



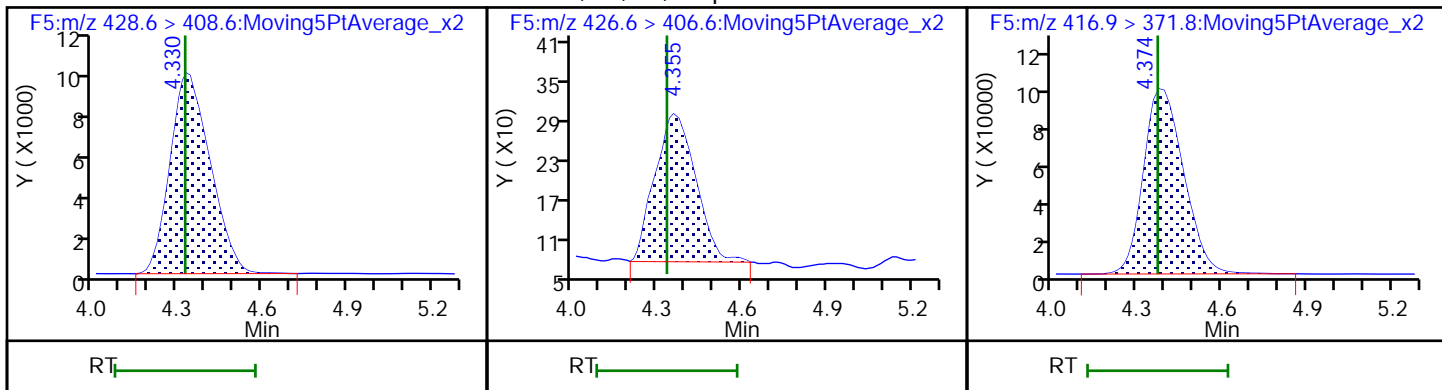
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D 13 M2-6:2 FTS

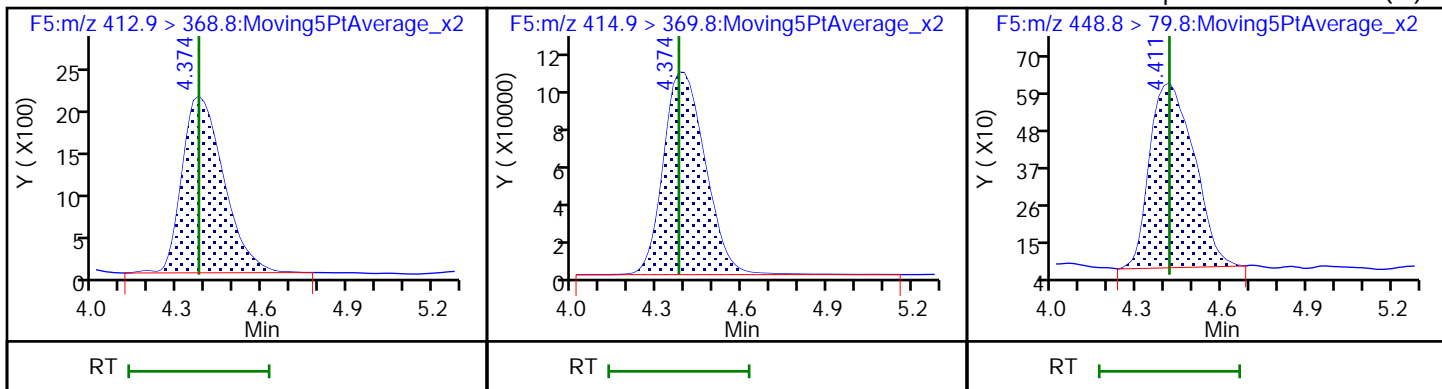
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

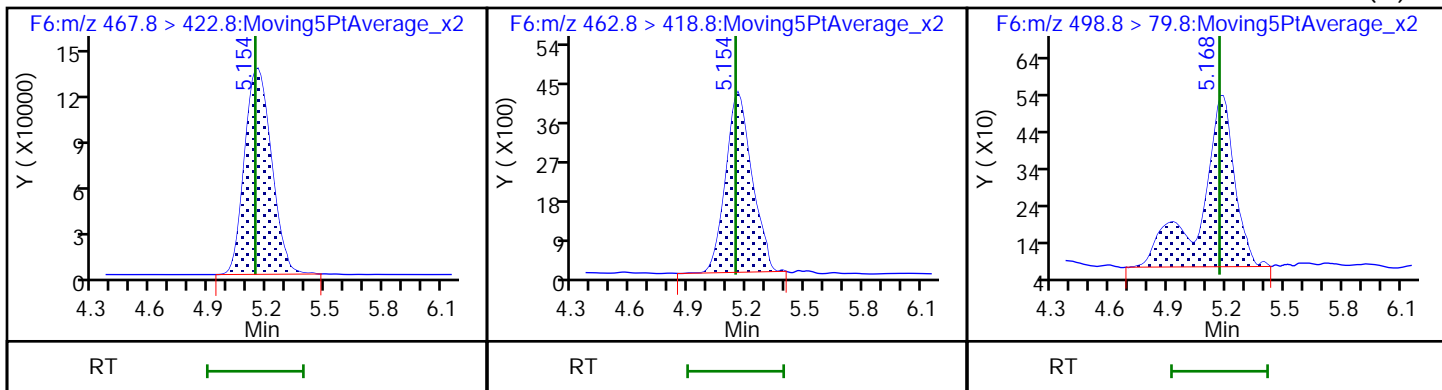
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid

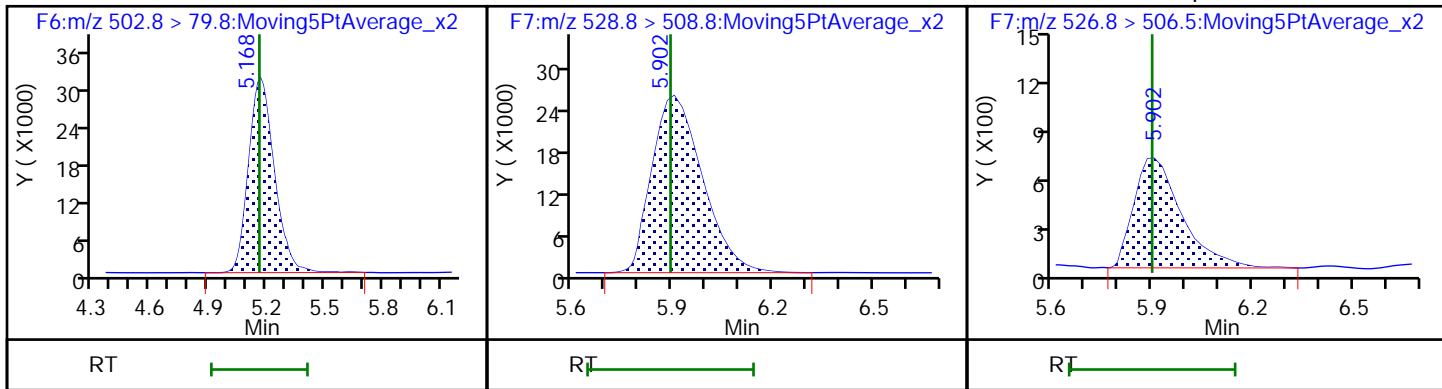
21 Perfluorooctanesulfonic acid (M)



D 22 13C4 PFOS

D 24 M2-8:2 FTS

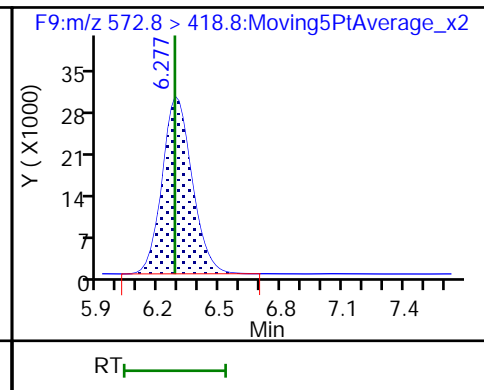
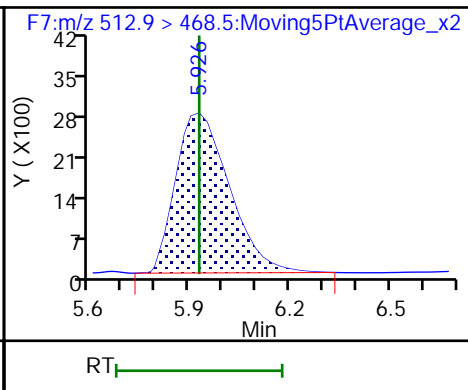
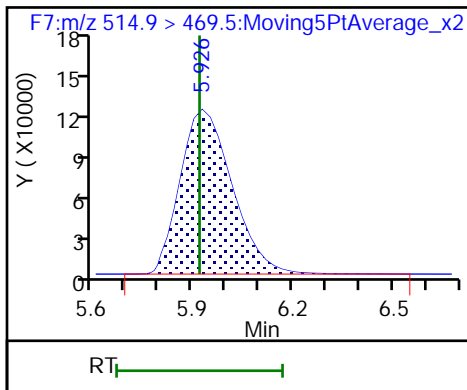
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

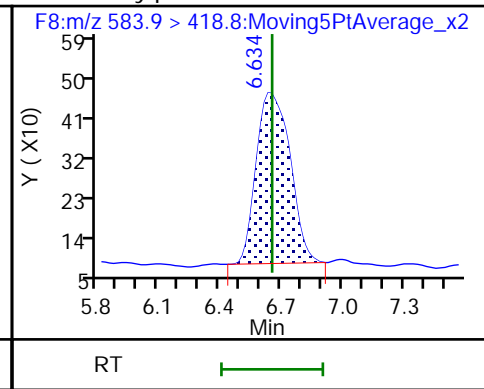
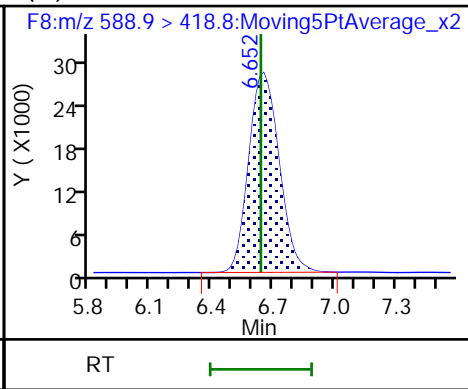
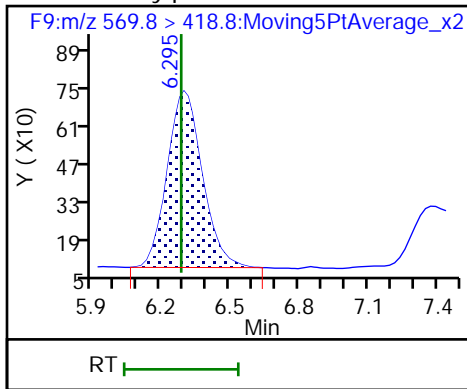
25 Perfluorodecanoic acid

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamide (M)

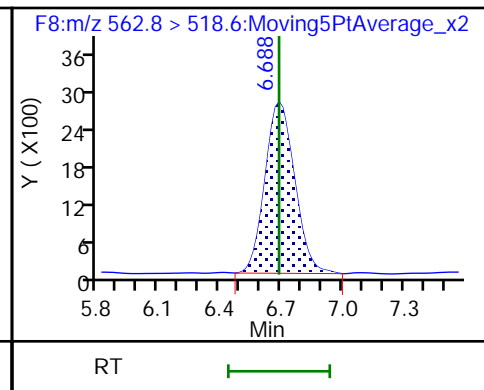
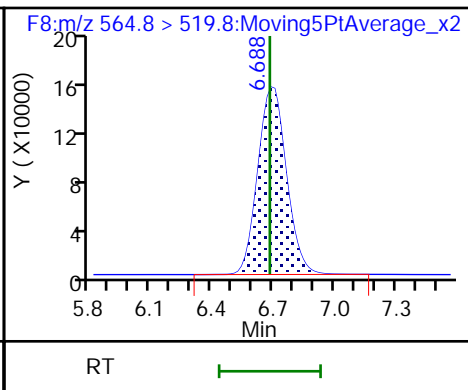
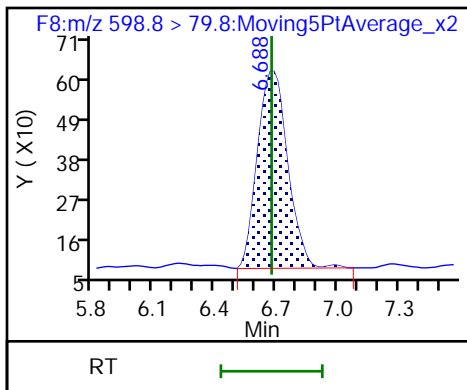
30 N-ethylperfluorooctanesulfonamide (M)



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

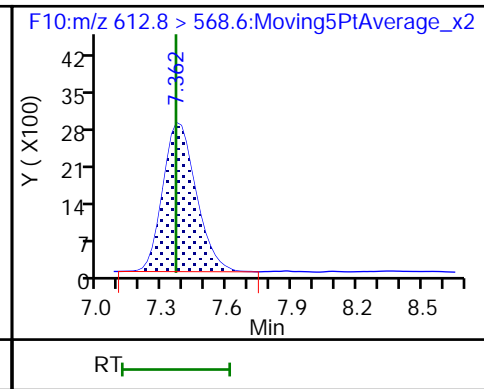
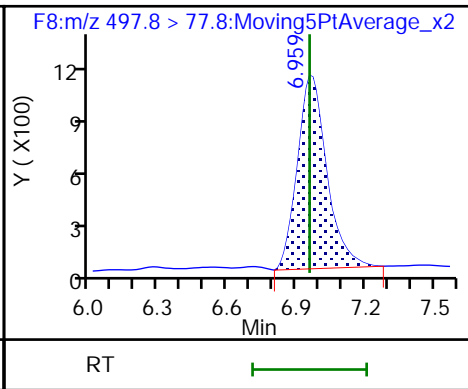
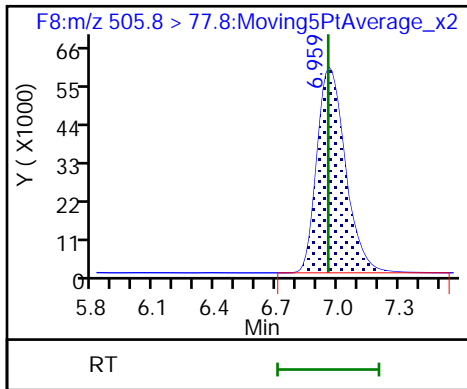
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

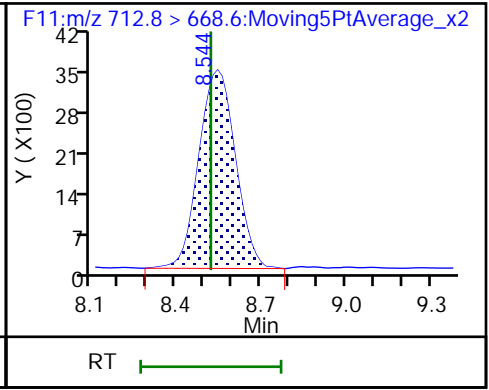
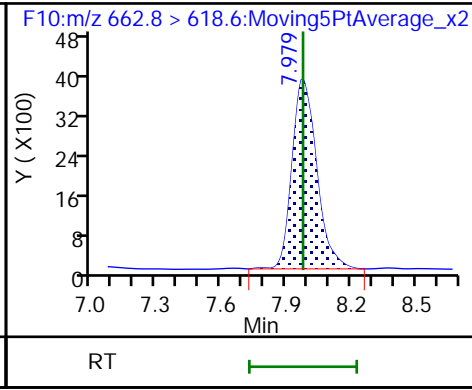
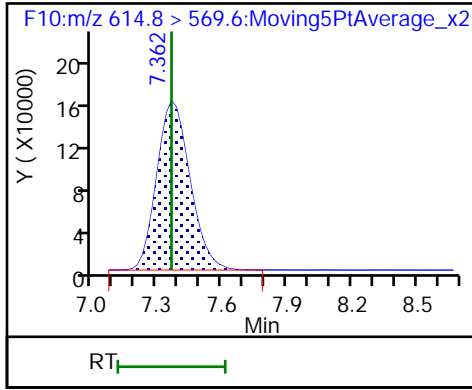
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid (M)

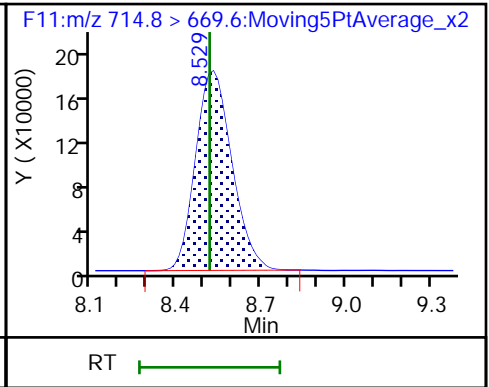
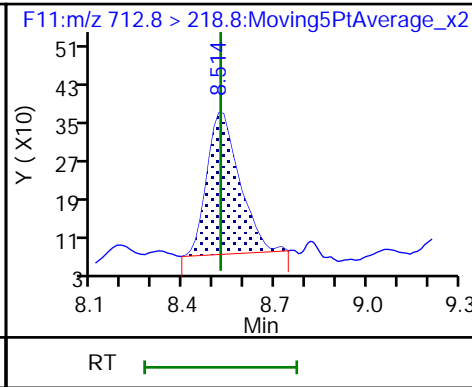
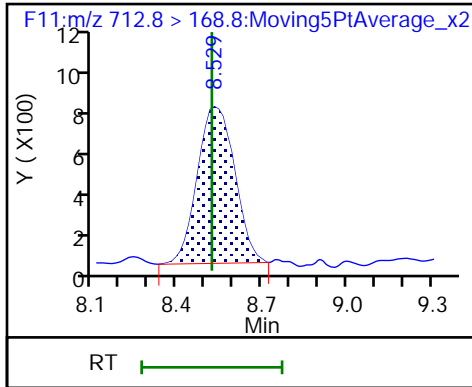
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

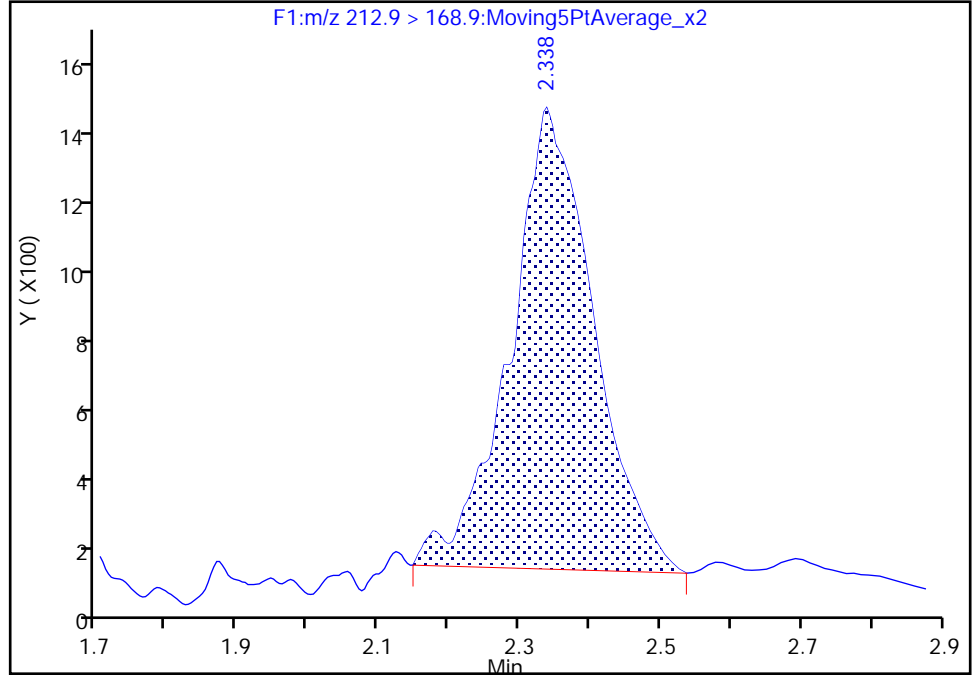
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Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

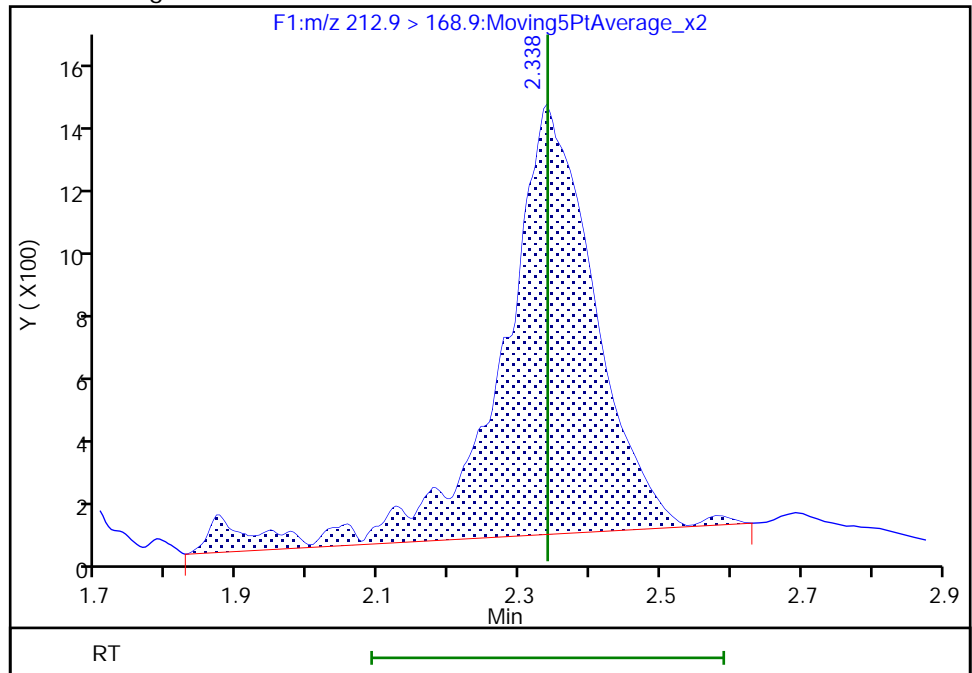
RT: 2.34
Area: 10405
Amount: 0.941374
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 12324
Amount: 1.040496
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:38:19
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 315 of 589

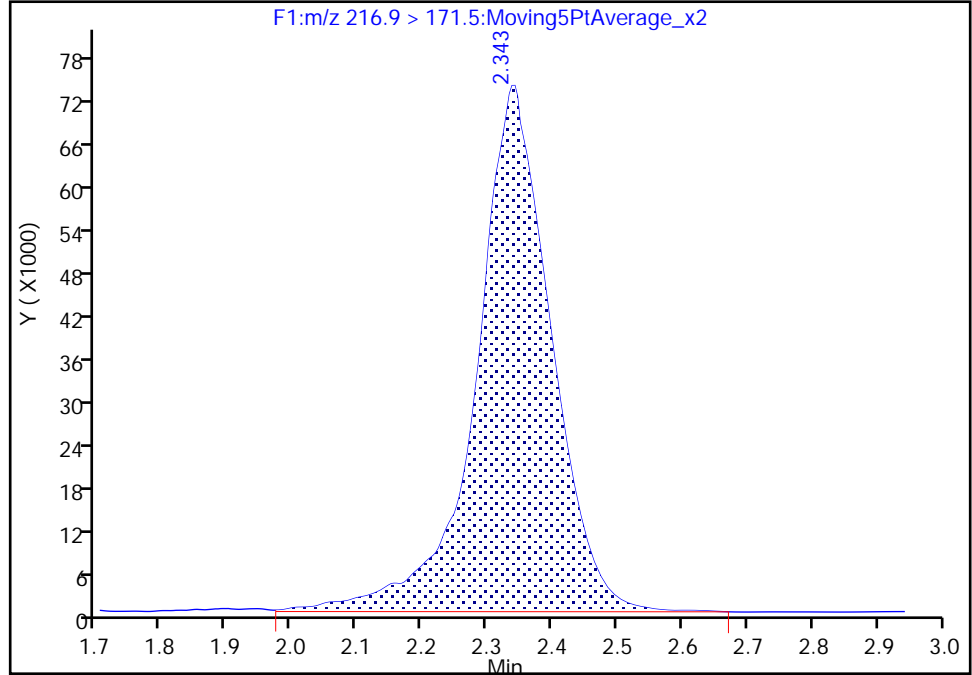
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

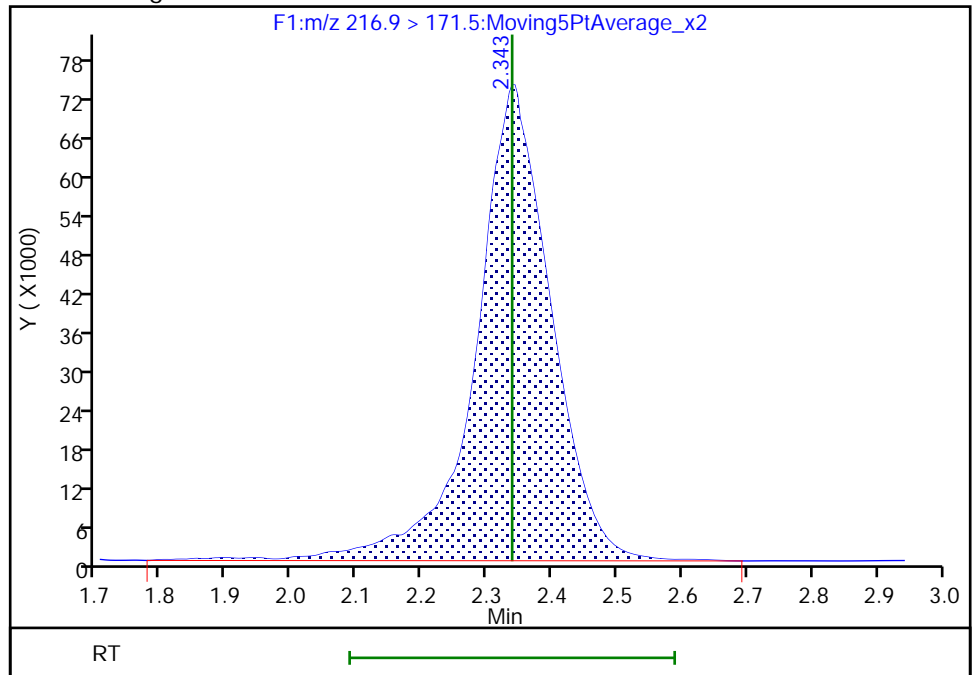
RT: 2.34
Area: 587010
Amount: 50.433435
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 590841
Amount: 47.835015
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:38:25
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 316 of 589

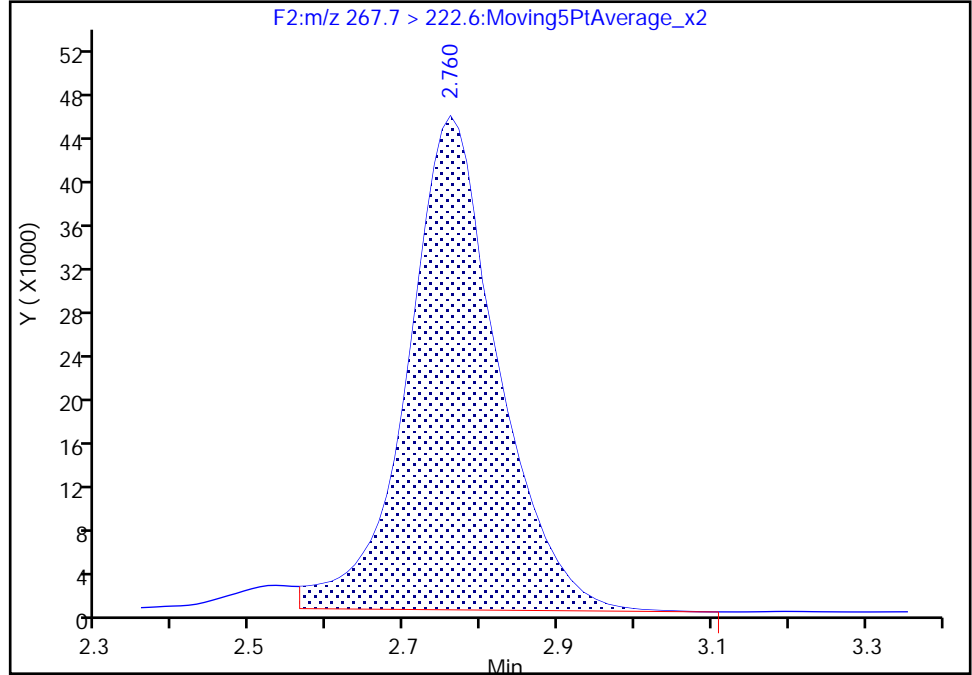
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 3 13C5 PFPeA, CAS: STL01893
Signal: 1

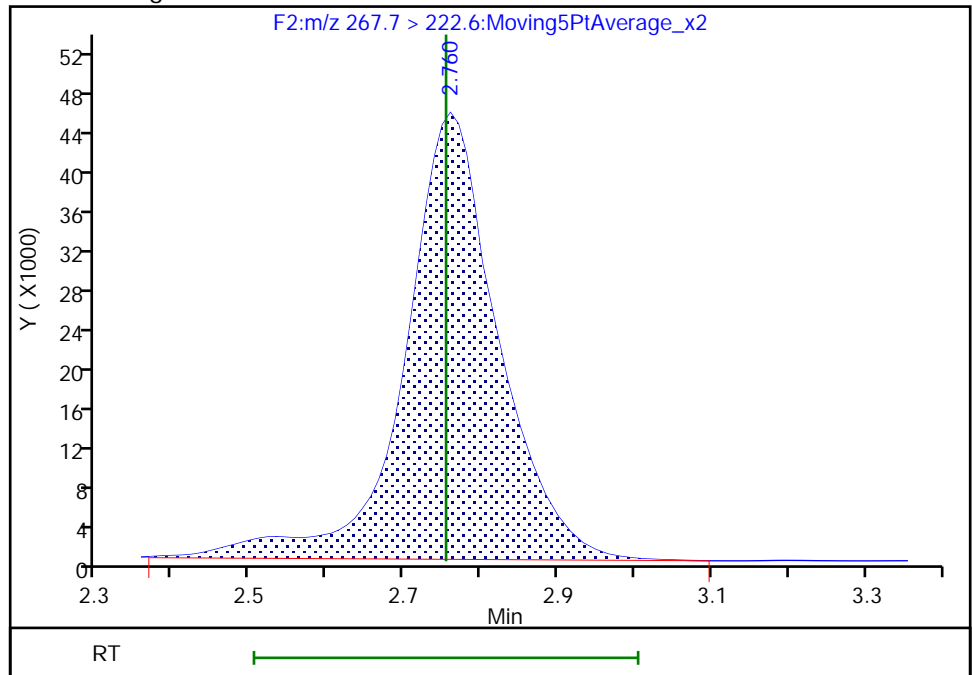
RT: 2.76
Area: 373369
Amount: 50.606502
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 387945
Amount: 49.543718
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:38:34
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 317 of 589

TestAmerica Burlington

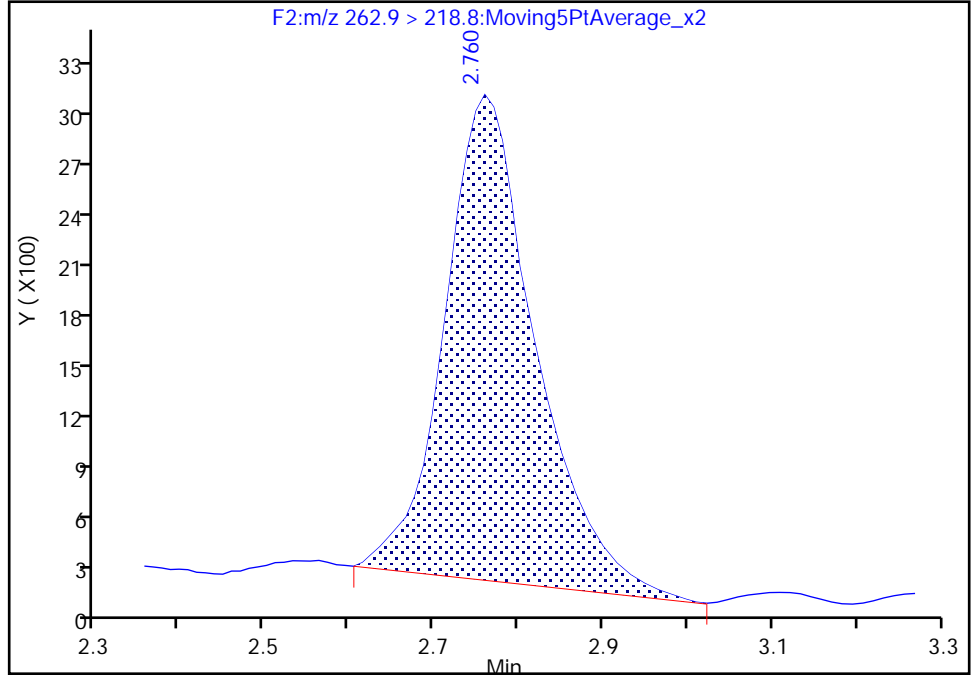
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Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

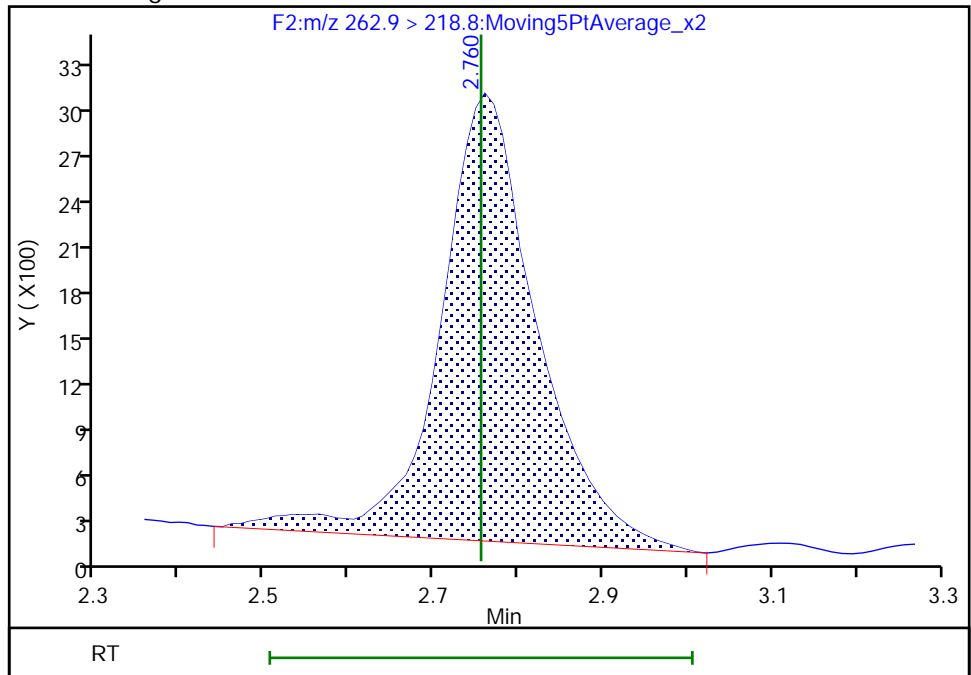
RT: 2.76
Area: 21184
Amount: 1.031237
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 23003
Amount: 1.041012
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:38:29
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

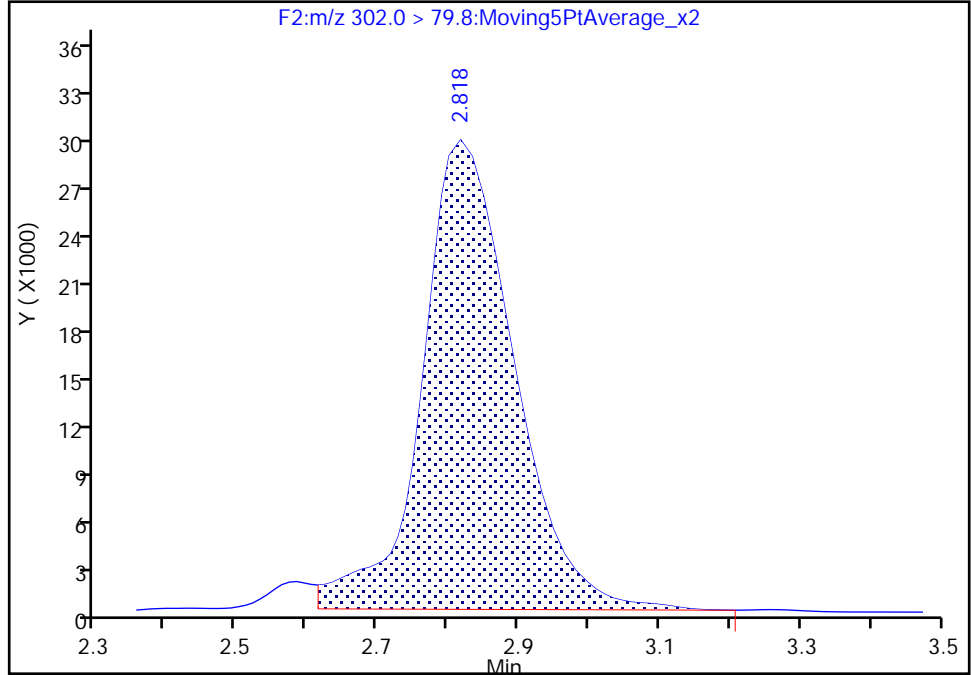
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 6 13C3 PFBS, CAS: STL02337
Signal: 1

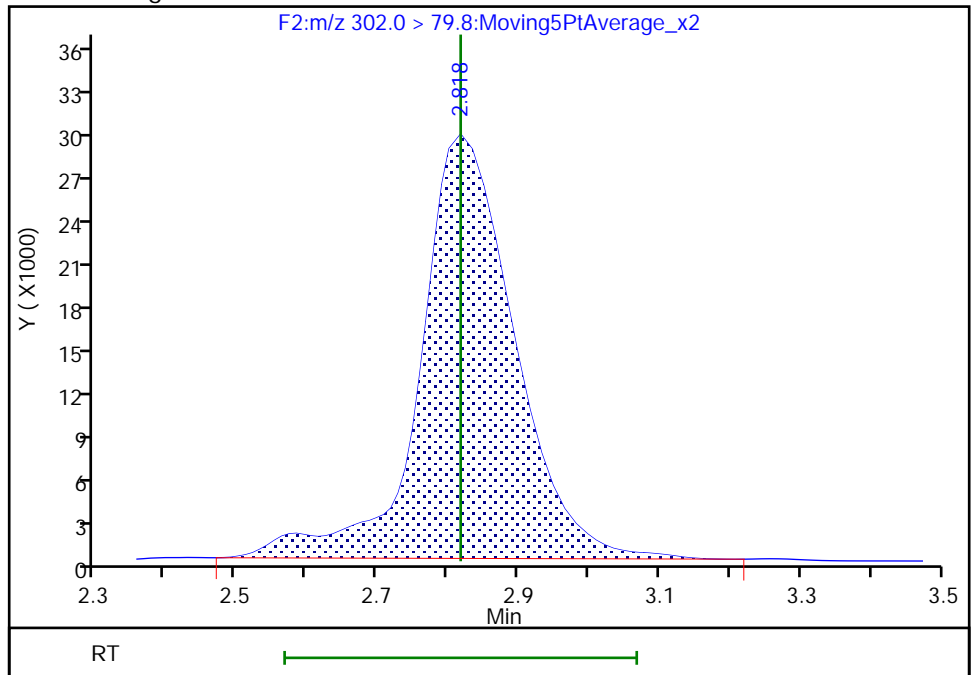
RT: 2.82
Area: 265894
Amount: 45.094957
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 273141
Amount: 42.256528
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:38:38
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

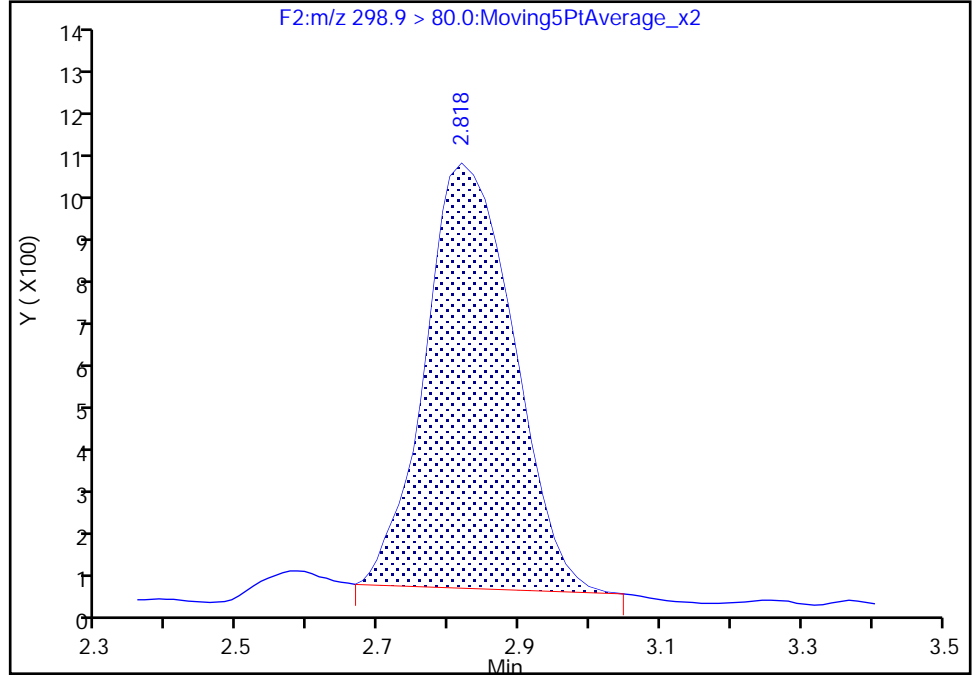
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

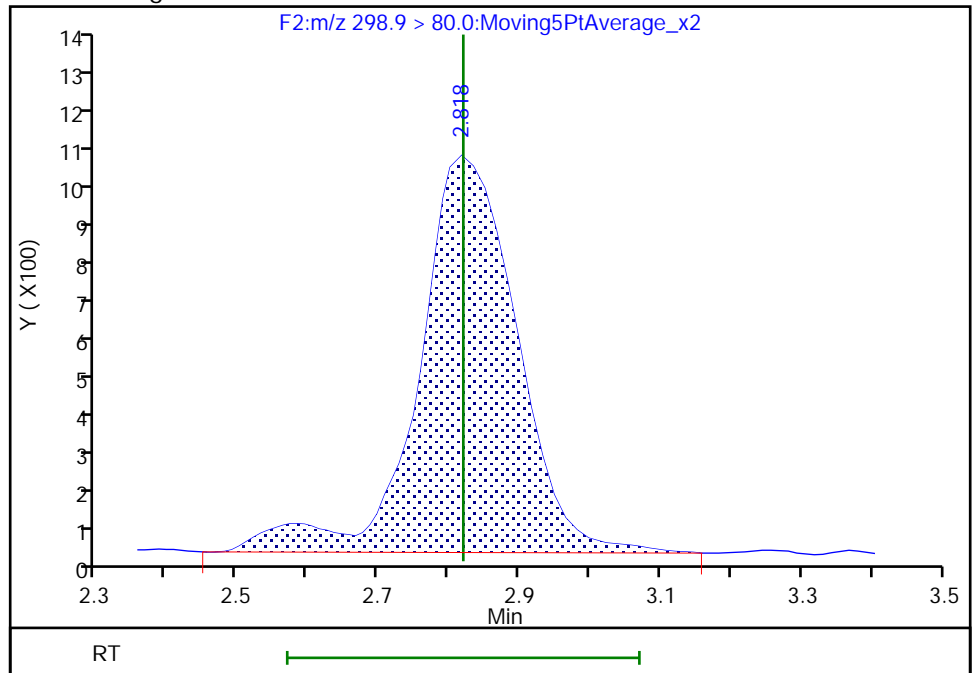
RT: 2.82
Area: 8245
Amount: 1.034192
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 9516
Amount: 0.928366
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:38:41
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington

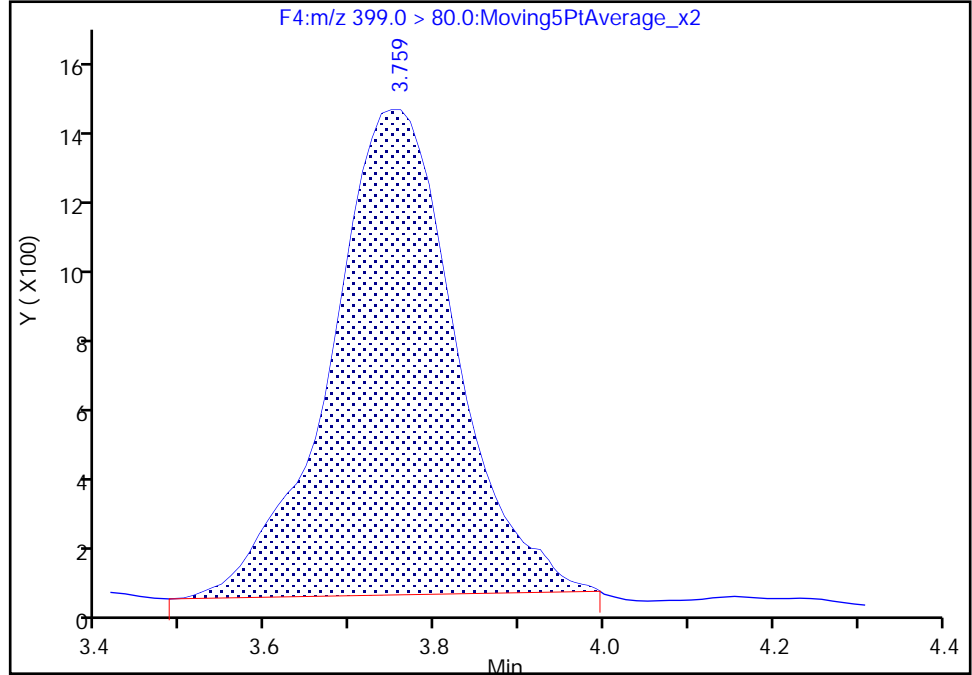
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

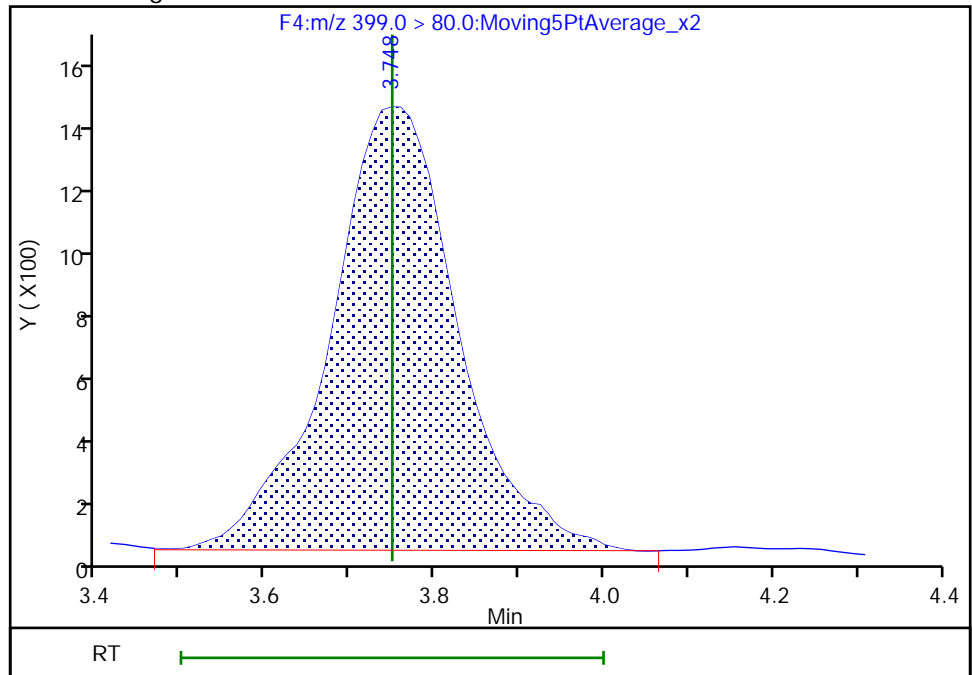
RT: 3.76
Area: 13761
Amount: 0.992838
Amount Units: ng/ml

Processing Integration Results



RT: 3.75
Area: 14202
Amount: 1.077699
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:42:46
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

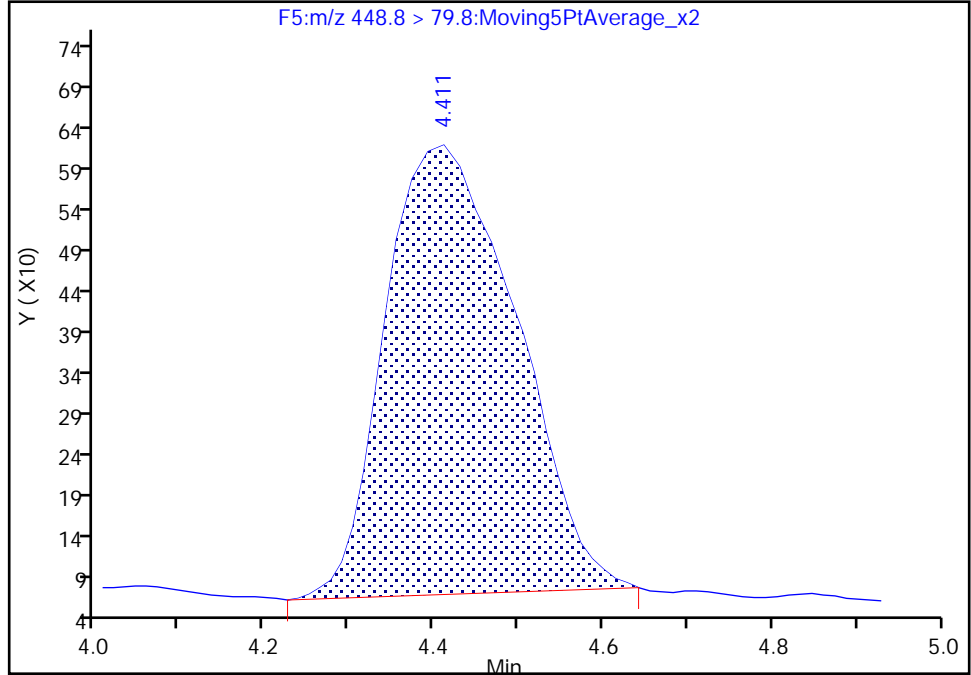
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

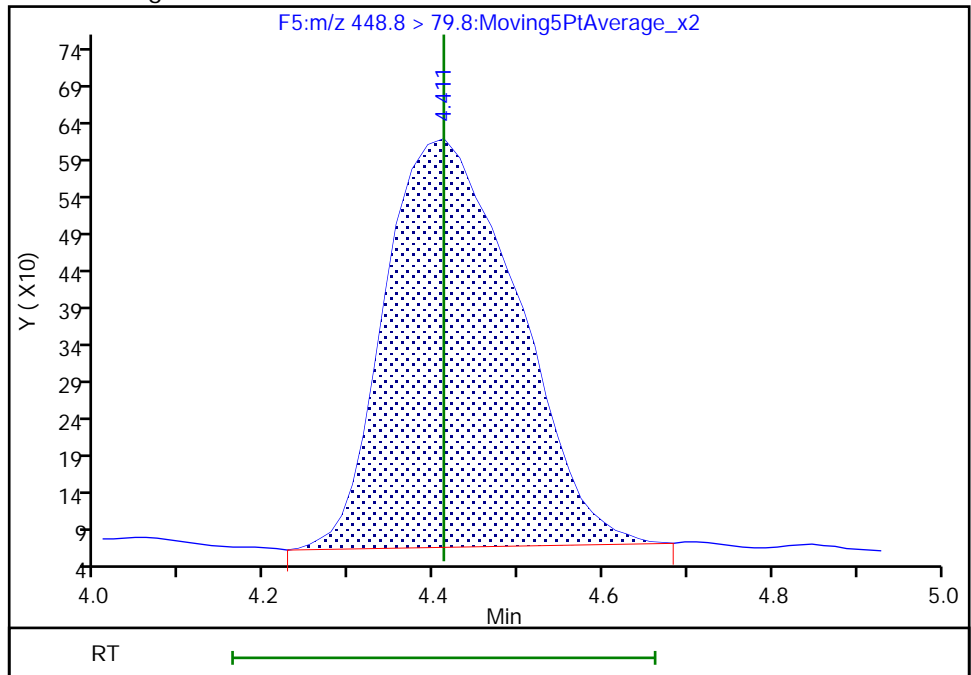
RT: 4.41
Area: 5875
Amount: 1.031299
Amount Units: ng/ml

Processing Integration Results



RT: 4.41
Area: 5966
Amount: 1.037417
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:42:56
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

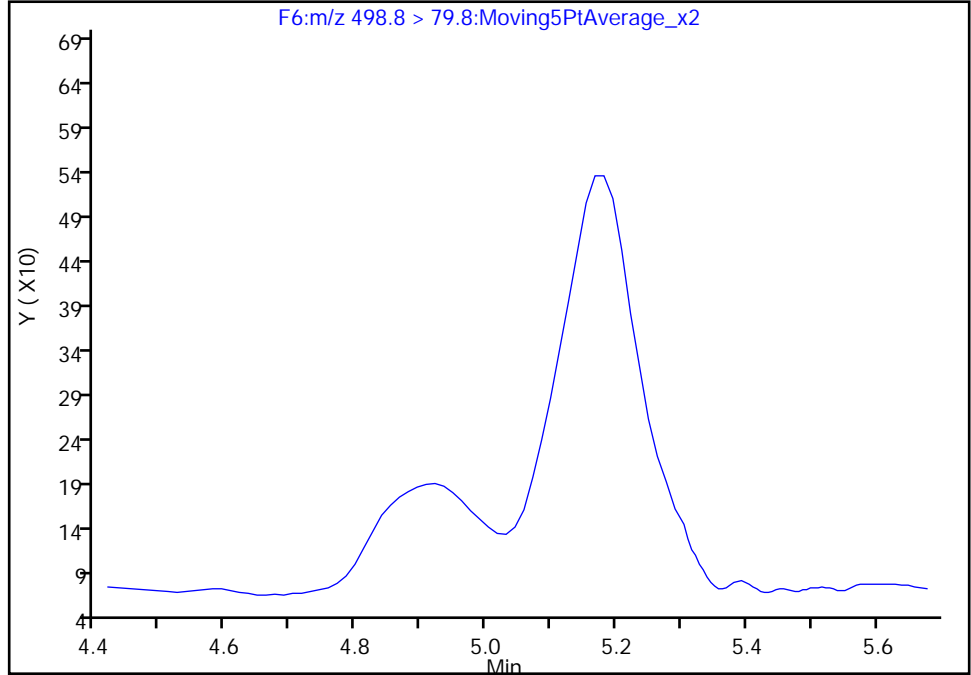
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Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

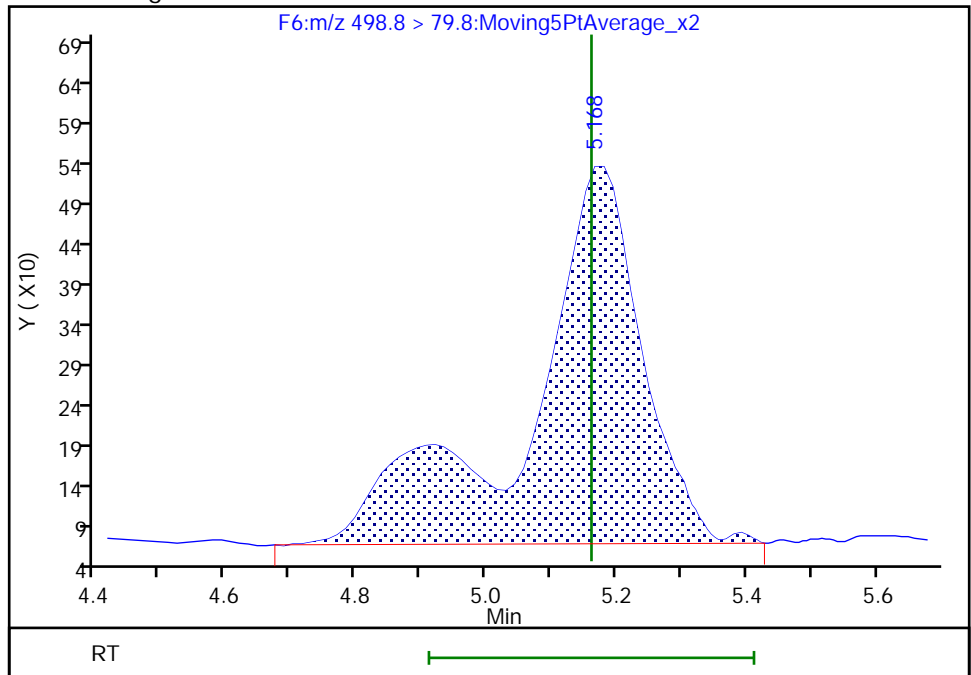
Not Detected
Expected RT: 5.16

Processing Integration Results



Manual Integration Results

RT: 5.17
Area: 5566
Amount: 0.893907
Amount Units: ng/ml



Reviewer: chirgwinb, 17-Oct-2018 14:38:03
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

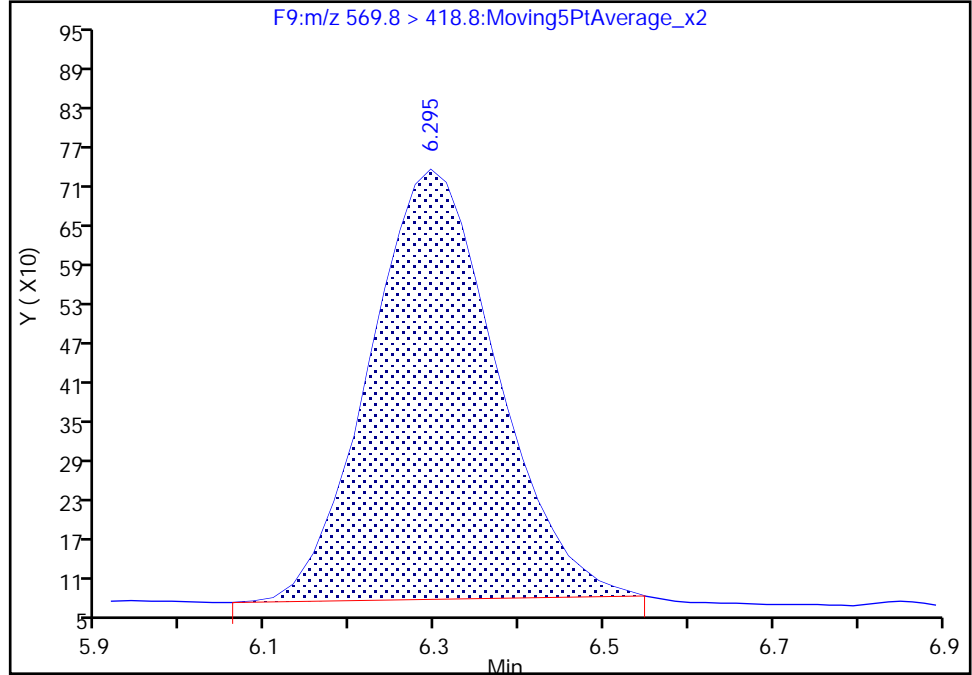
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

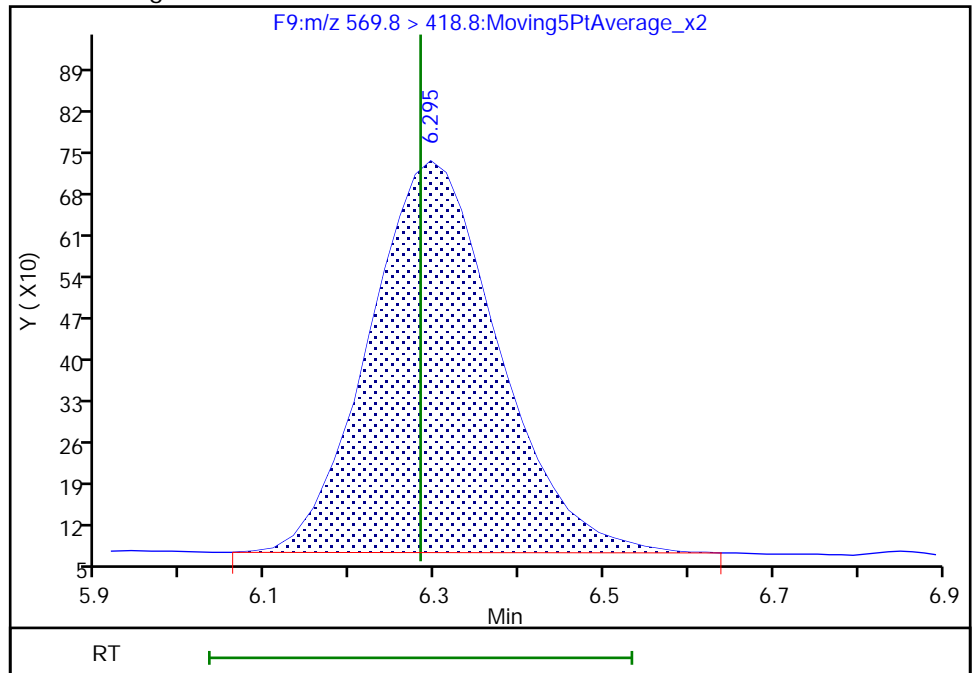
RT: 6.29
Area: 6825
Amount: 1.005310
Amount Units: ng/ml

Processing Integration Results



RT: 6.29
Area: 7003
Amount: 1.056846
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:43:08
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

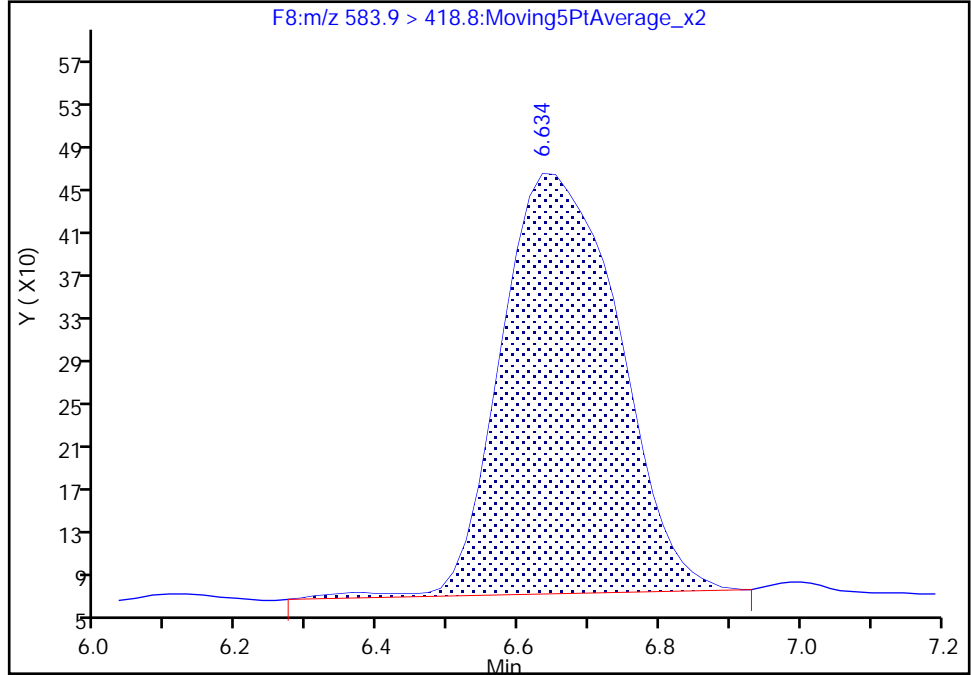
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

30 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

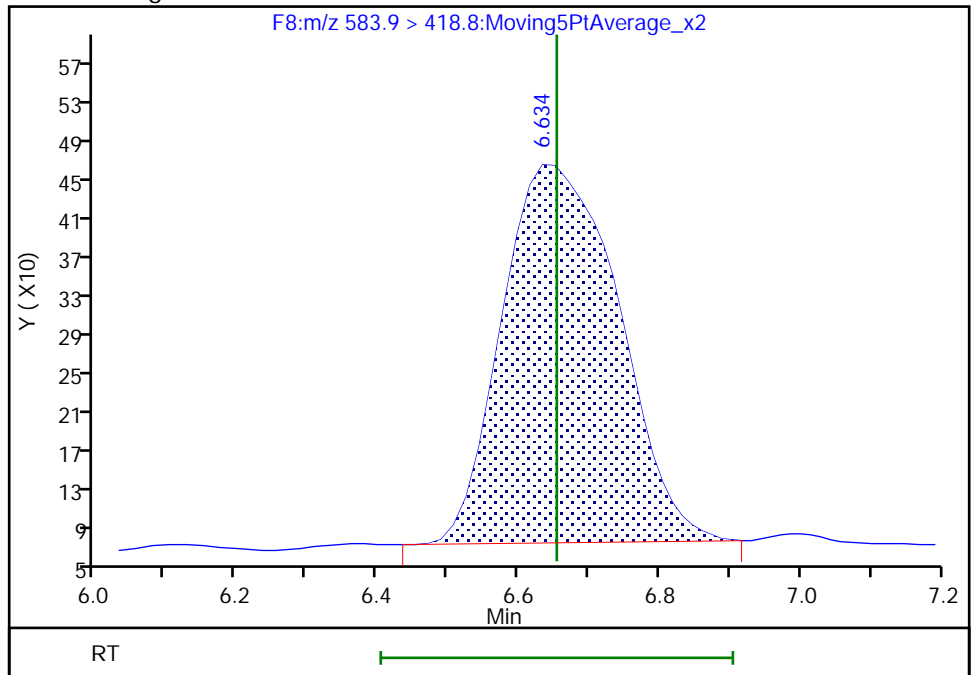
RT: 6.63
Area: 4518
Amount: 0.942756
Amount Units: ng/ml

Processing Integration Results



RT: 6.63
Area: 4446
Amount: 0.790050
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:43:53
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

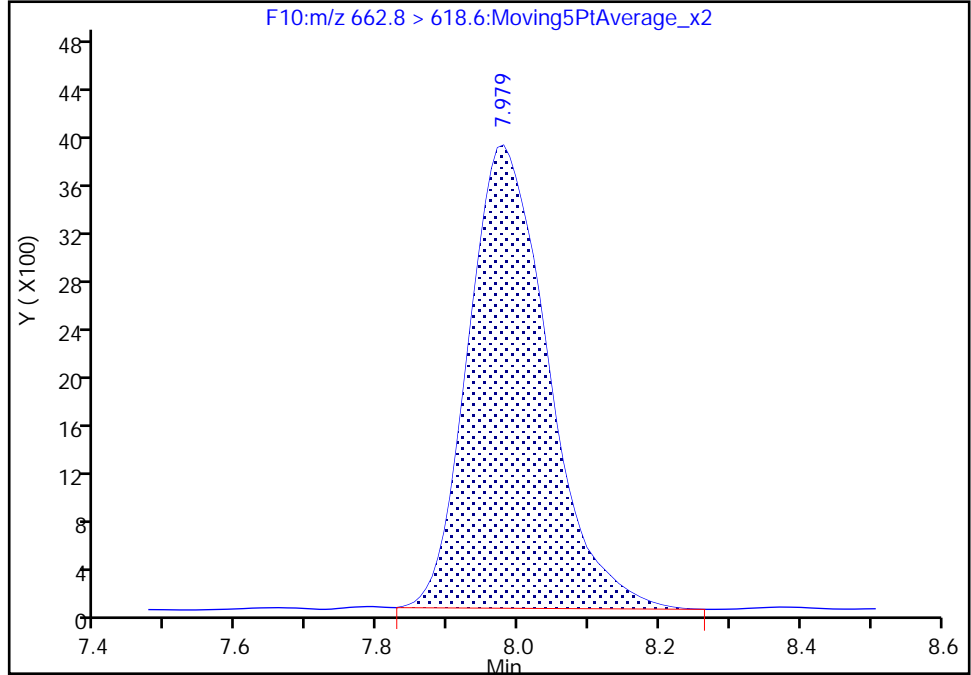
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A06.d
Injection Date: 17-Oct-2018 13:20:08 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

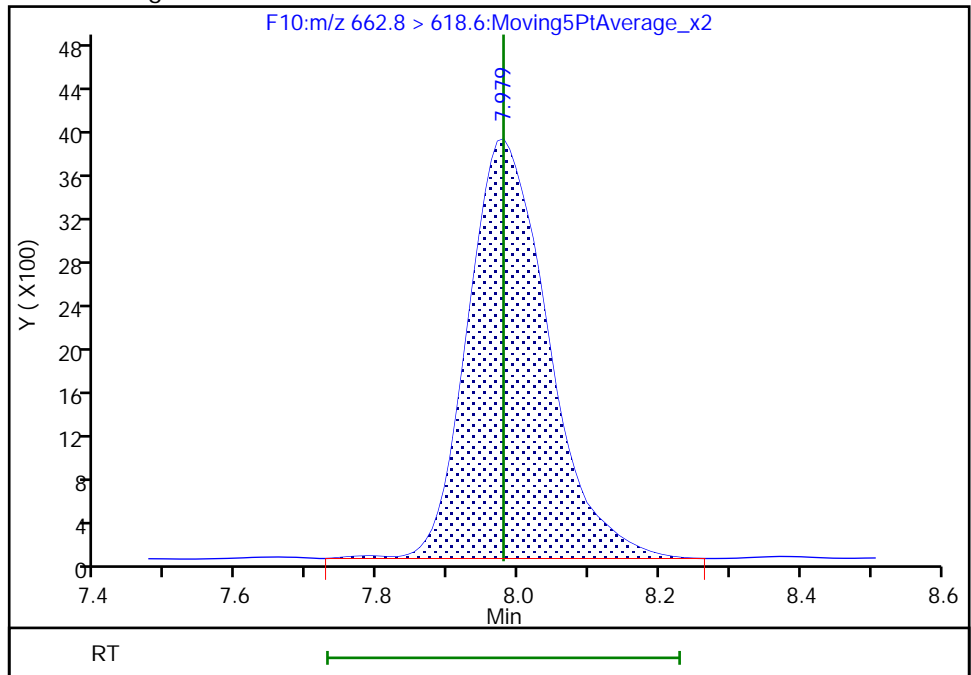
RT: 7.98
Area: 30027
Amount: 0.985914
Amount Units: ng/ml

Processing Integration Results



RT: 7.98
Area: 30302
Amount: 0.977724
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A07.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 17-Oct-2018 13:35:57 ALS Bottle#: 0 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-007 IC 2
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:16 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 14:45:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.334	2.337	-0.003	1.000	669118	51.5	103	440	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.326	2.336	-0.010	0.997	22870	1.83		91.3	48.9	M
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.750	2.755	-0.005	0.996	49422	2.09		104	64.8	M
D 3 13C5 PFPeA	267.7 > 222.6	2.760	2.754	0.006	1.000	415435	50.5	101	244	
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.818	0.0	1.000	324907	47.8	103	996	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.820	-0.002	1.000	24774	2.03		102	152	M
D 7 13C2 PFHxA	314.8 > 269.6	3.177	3.172	0.005	1.000	765970	51.7	103	2953	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.177	3.174	0.003	1.000	31150	1.96		98.0	550	
D 9 13C4 PFHpA	366.9 > 321.8	3.703	3.702	0.001	1.000	1388164	51.1	102	1547	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.703	3.705	-0.002	1.000	53644	1.98		98.8	282	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	364345	46.4	98.0	585	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.759	3.749	0.010	1.003	26334	2.01		100	90.0	
D 13 M2-6:2 FTS	428.6 > 408.6	4.317	4.325	-0.008	1.000	104496	43.1	90.8	883	
14 1H,1H,2H,2H-perfluorooctanesulfoni										
426.6 > 406.6	4.317	4.330	-0.013	1.000	4122	1.90		95.2	88.6	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	1088528	52.5		105	1926	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	40936	1.90		95.0	554	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1104861	50.0			807	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.412	4.412	0.0	0.856	12449	1.86		93.1	88.9	M
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1443703	51.6		103	1490	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	71450	2.25		113	321	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.161	-0.007	1.000	13096	1.81		90.5	145	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.161	-0.007	1.000	334603	48.1		101	914	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.902	5.891	0.011	1.000	327367	49.9		104	1910	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.926	5.896	0.030	1.004	9630	1.75		87.3	61.7	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1558634	54.1		108	1027	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.926	0.0	1.000	58471	1.86		92.9	384	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	361095	49.0		98.1	2465	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.000	15677	2.00		100.0	38.1	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	308760	49.4		98.8	943	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.670	6.654	0.016	1.005	12950	2.18		109	246	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.675	-0.005	1.294	14452	1.97		98.7	189	
D 32 13C2 PFUnA										
564.8 > 519.8	6.688	6.682	0.006	1.000	1584814	52.8		106	2448	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.684	-0.014	0.997	70336	2.16		108	459	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	649104	48.4		96.9	11829	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.973	6.966	0.007	1.002	20523	1.87		93.4	268	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	62706	1.95		97.3	708	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	1876986	49.4		98.9	2527	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.979	7.979	0.0	0.937	705928	2.05		102	655	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.529	8.522	0.007	1.002	70942	2.06		103	342	
712.8 > 168.8	8.499	8.522	-0.023	0.998	11322		6.27(0.00-0.00)	103	103	
712.8 > 218.8	8.529	8.522	0.007	1.002	6875		10.32(0.00-0.00)	103	33.5	
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1765426	50.7		101	913	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L2_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A07.d

Injection Date: 17-Oct-2018 13:35:57

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

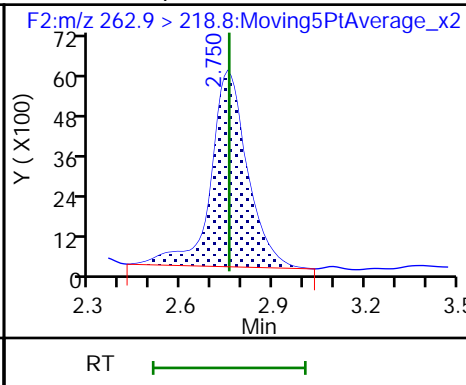
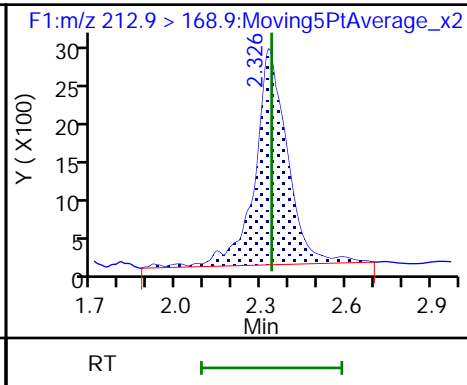
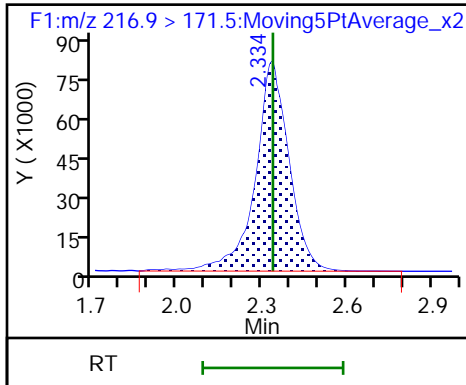
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

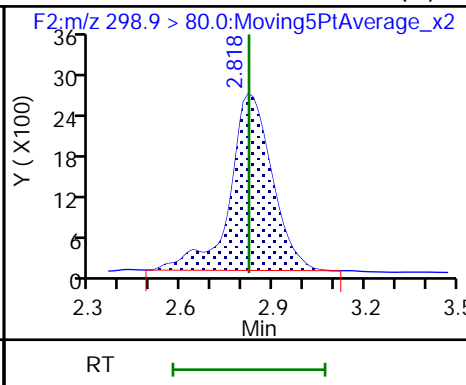
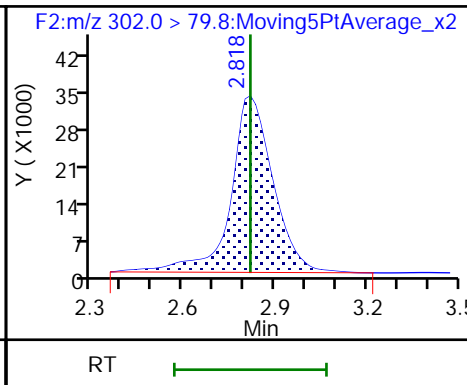
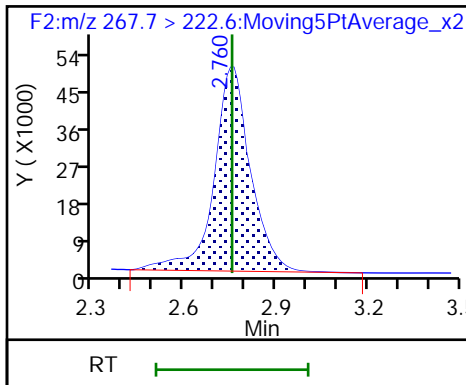
4 Perfluoropentanoic acid (M)



D 3 13C5 PFPeA

D 6 13C3 PFBS

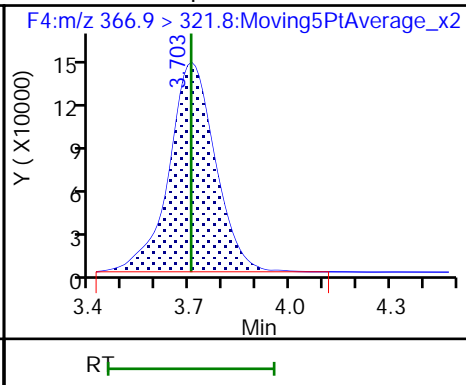
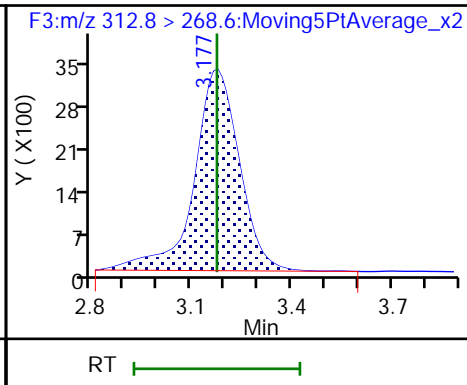
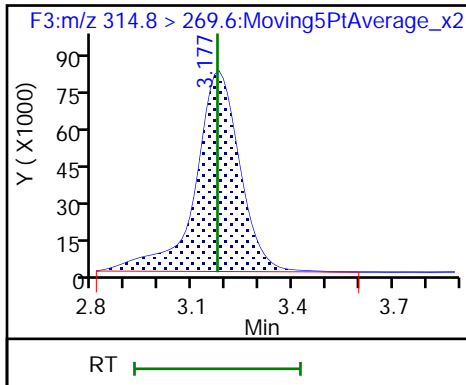
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

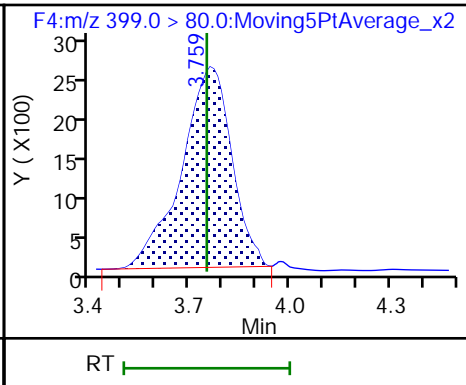
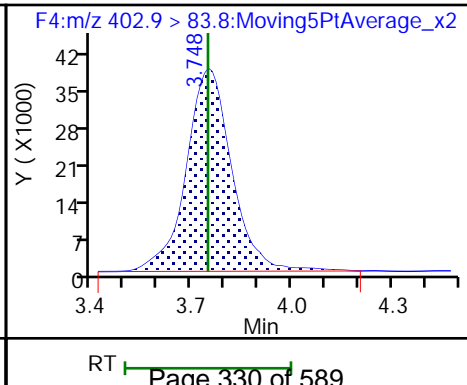
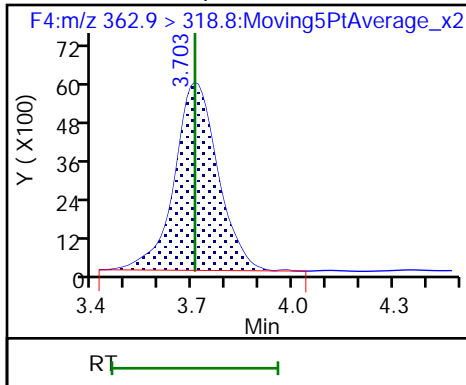
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

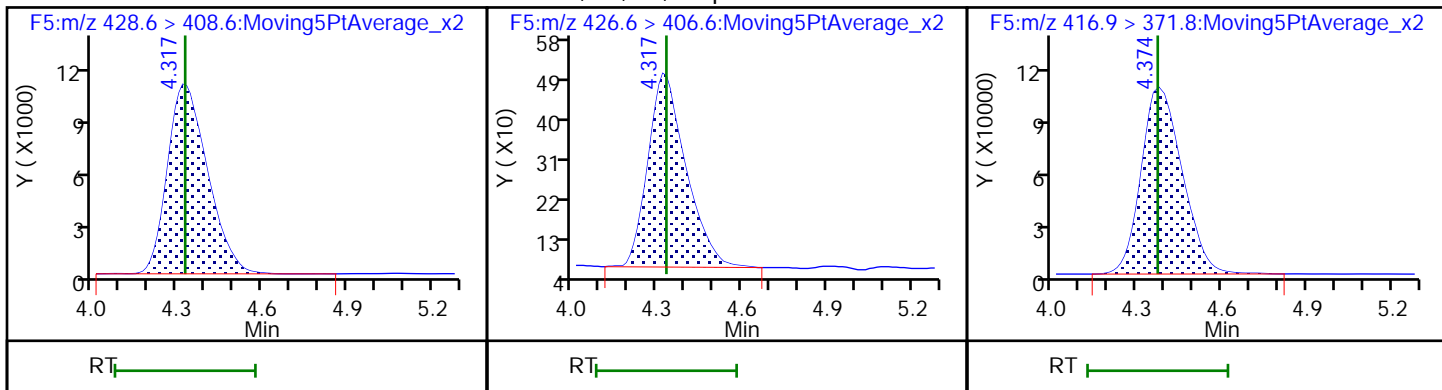
D 11 18O2 PFHxS

12 Perfluorohexanesulfonic acid



D 13 M2-6:2 FTS

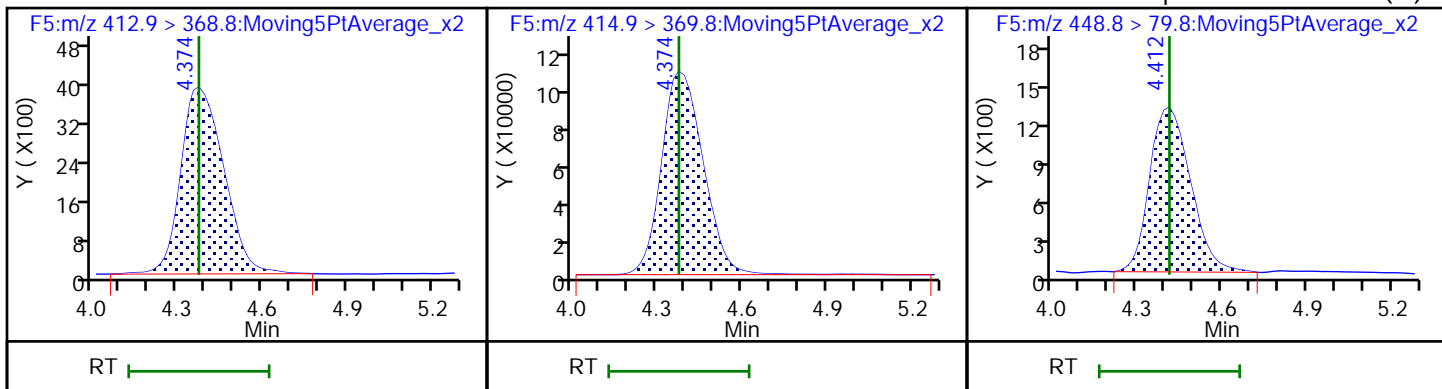
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

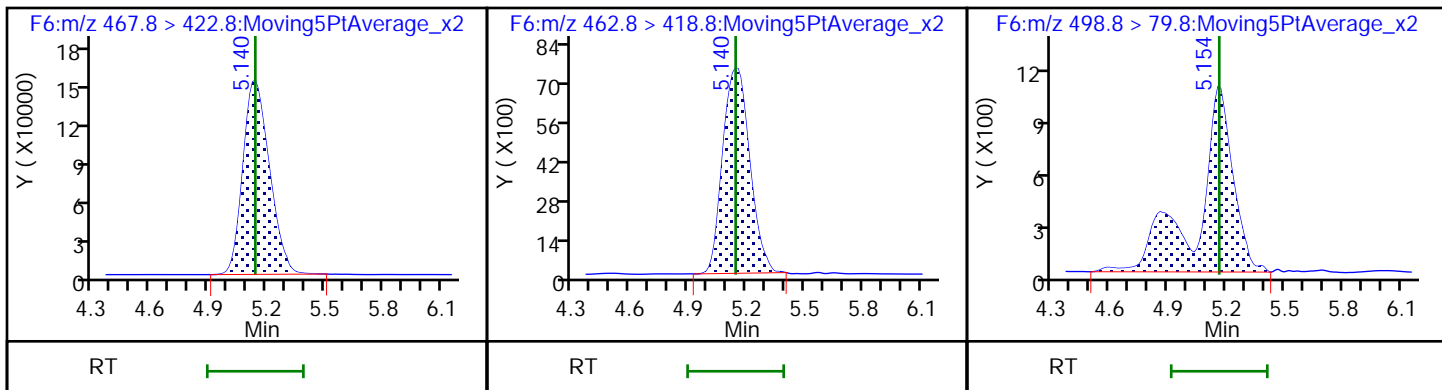
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid

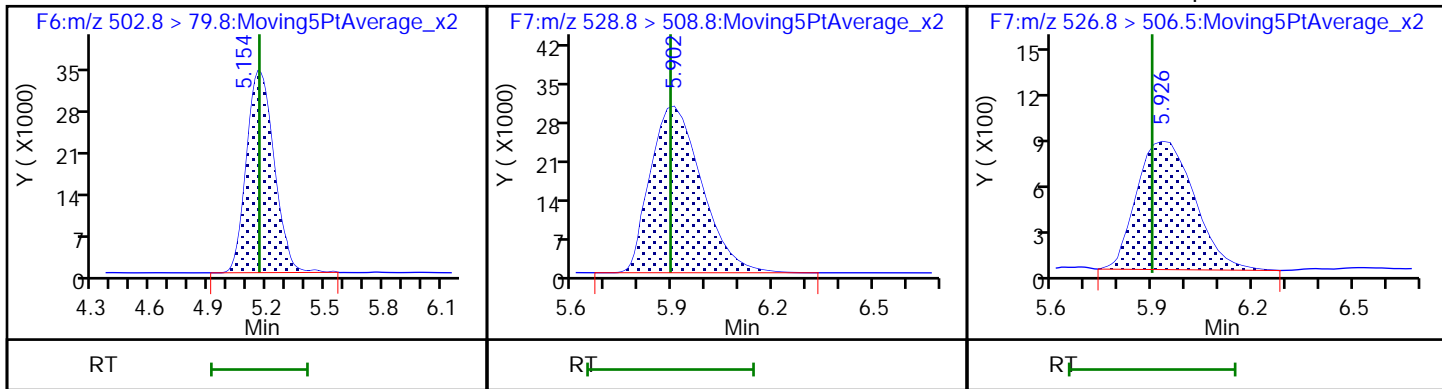
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

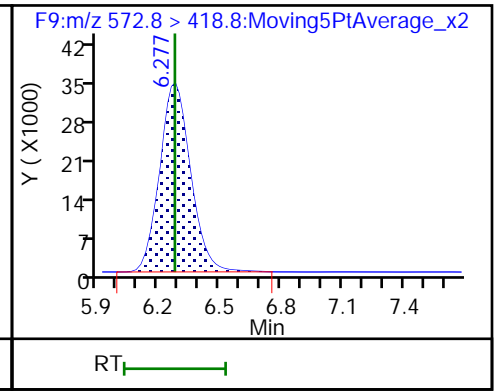
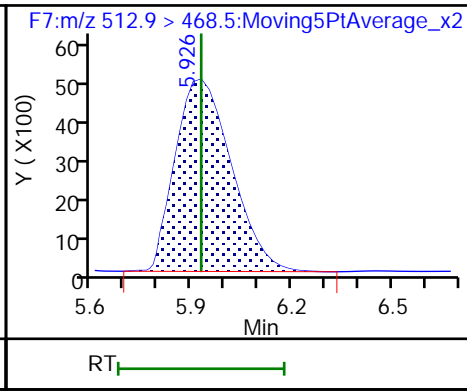
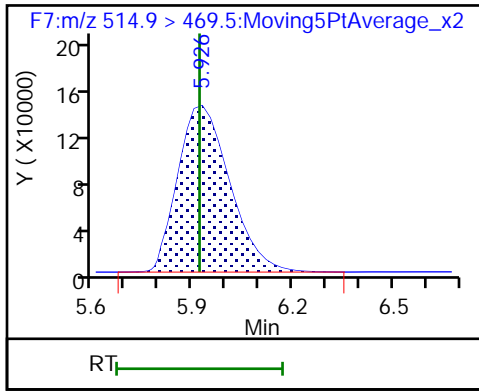
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

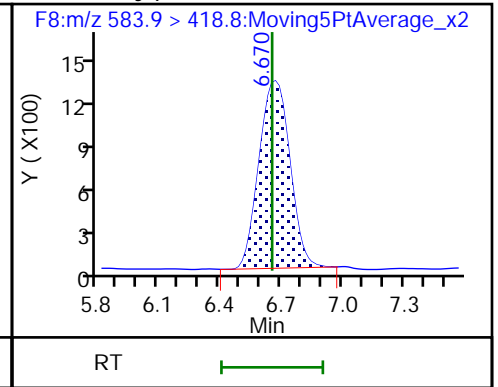
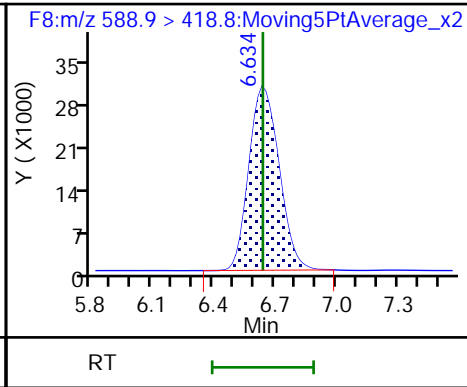
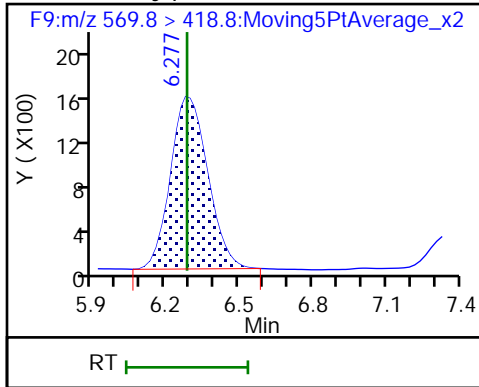
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

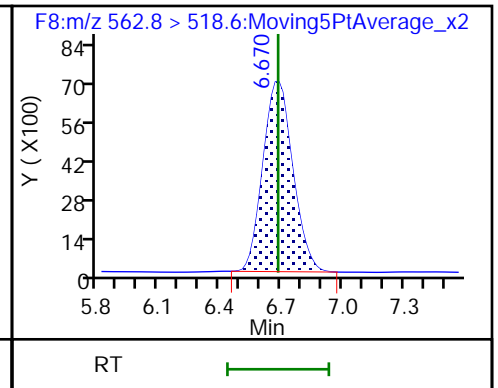
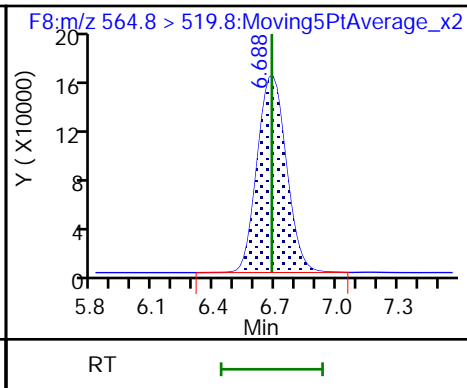
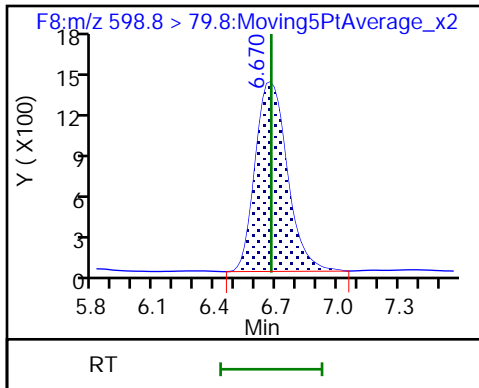
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

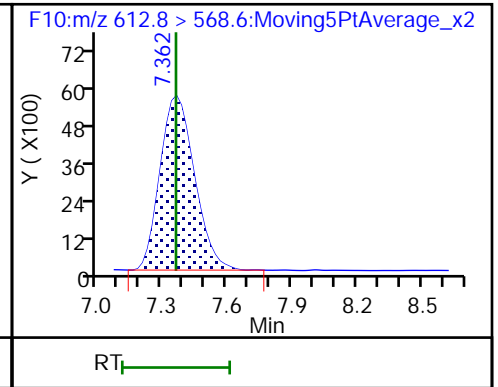
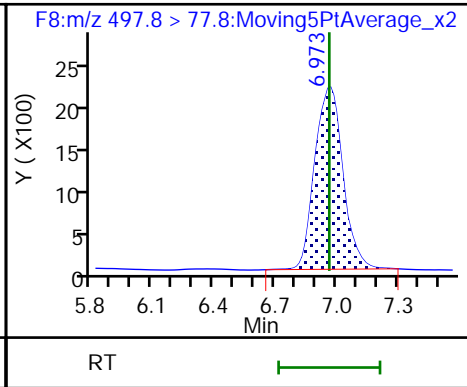
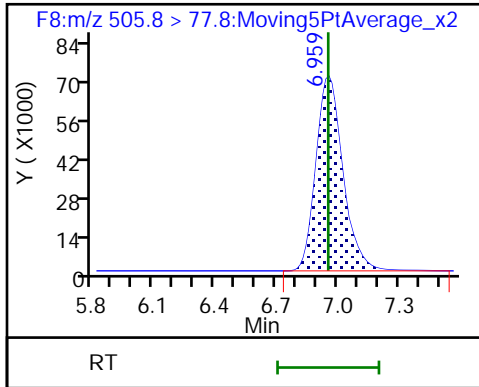
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

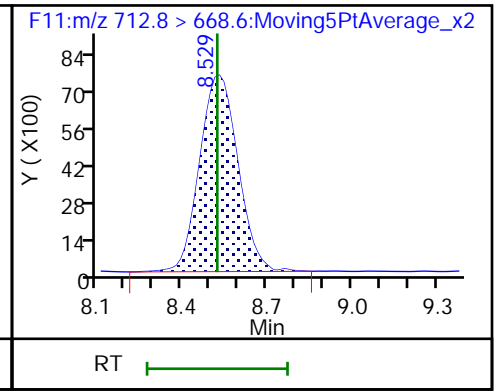
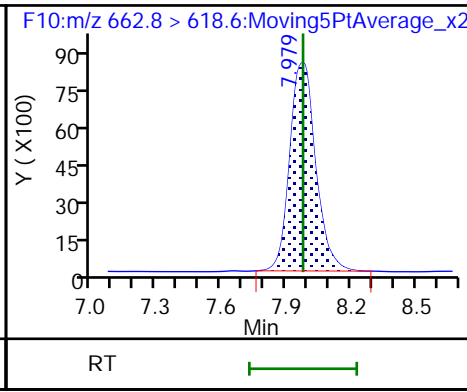
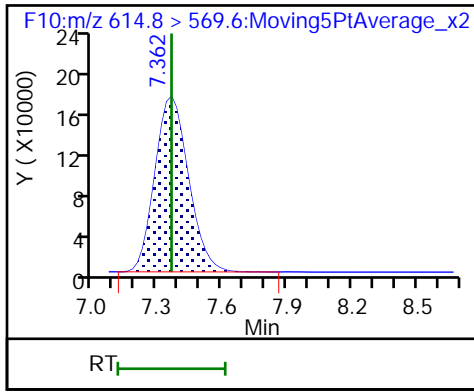
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid

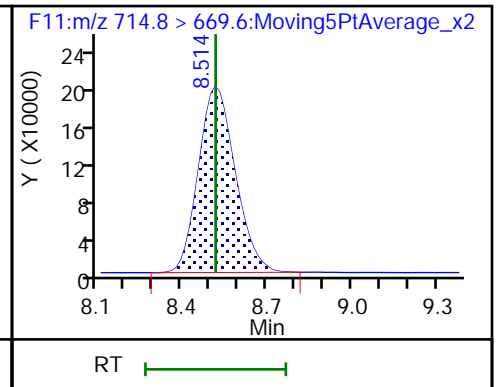
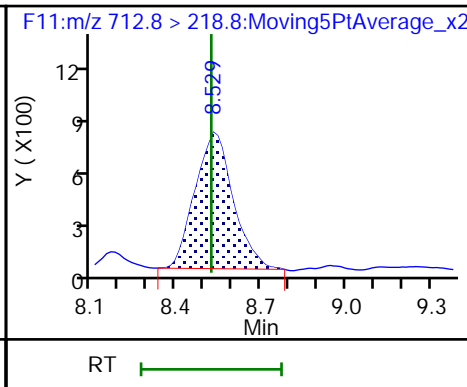
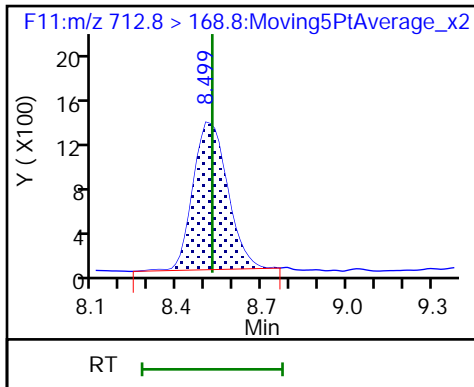
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

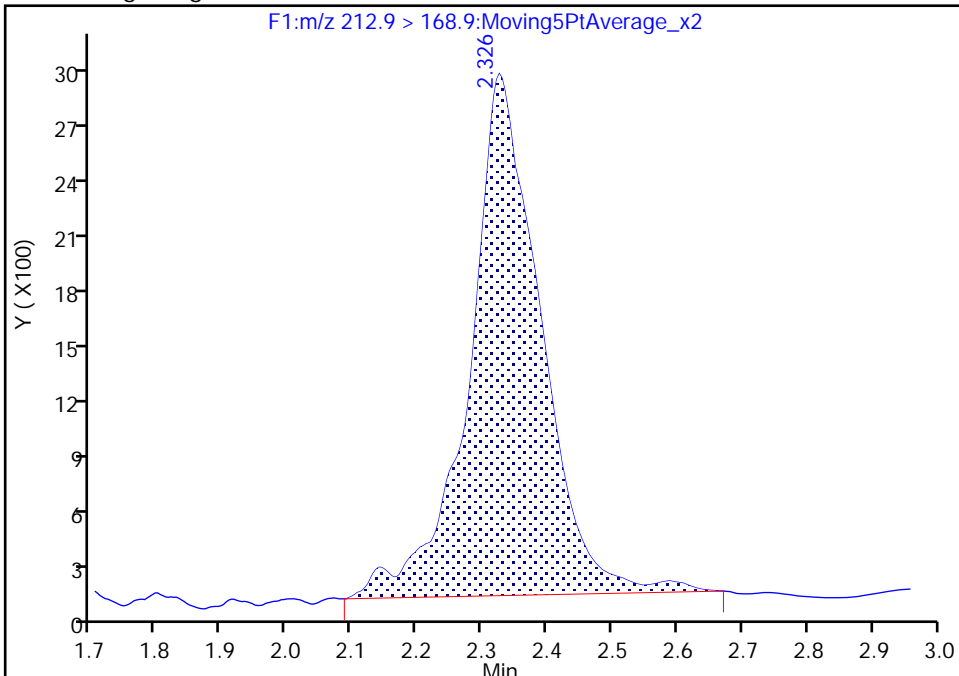
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A07.d
Injection Date: 17-Oct-2018 13:35:57 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

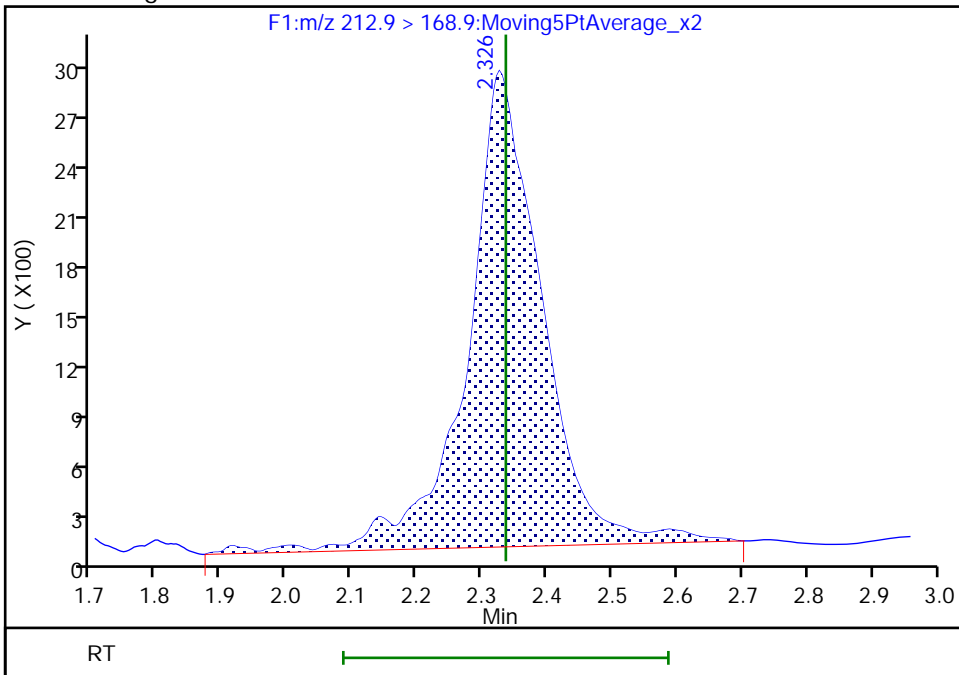
RT: 2.33
Area: 21612
Amount: 1.947491
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 22870
Amount: 1.826609
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:45:09
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

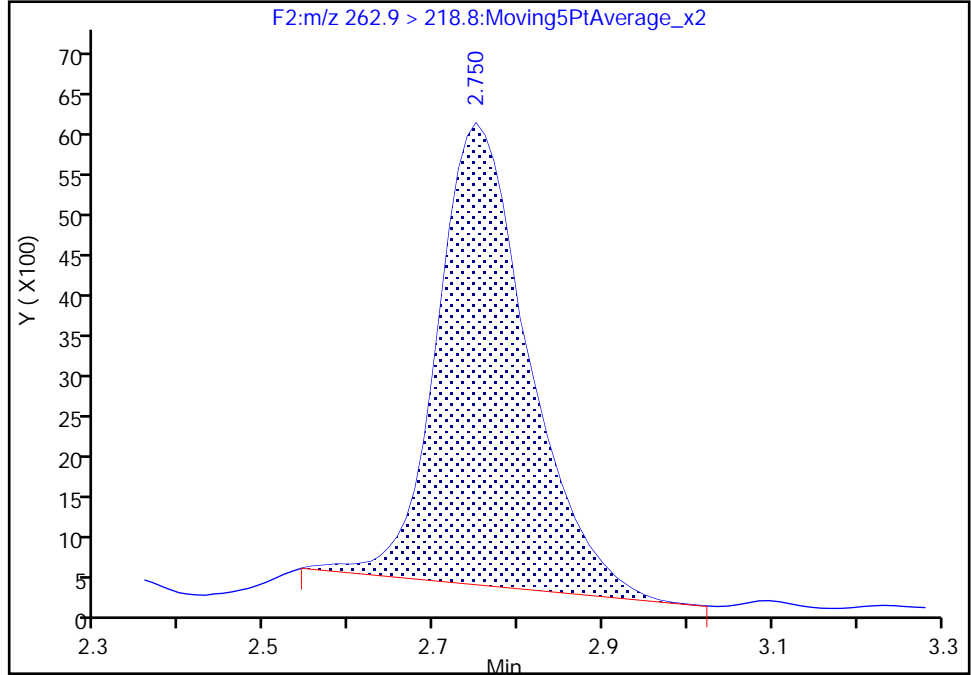
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A07.d
Injection Date: 17-Oct-2018 13:35:57 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

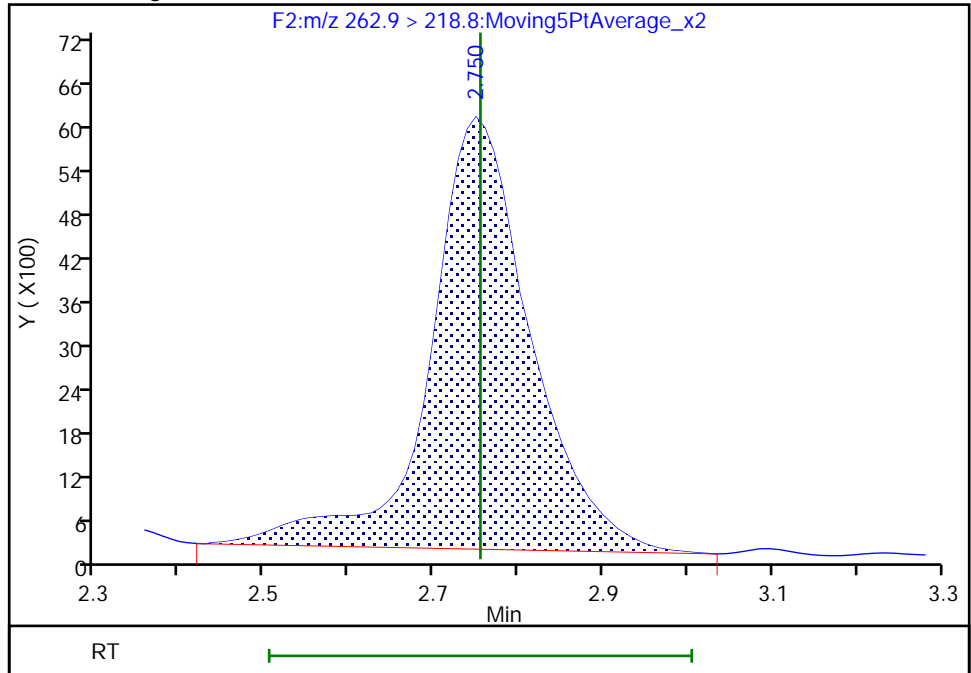
RT: 2.75
Area: 43265
Amount: 1.825367
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 49422
Amount: 2.088617
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:45:17
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

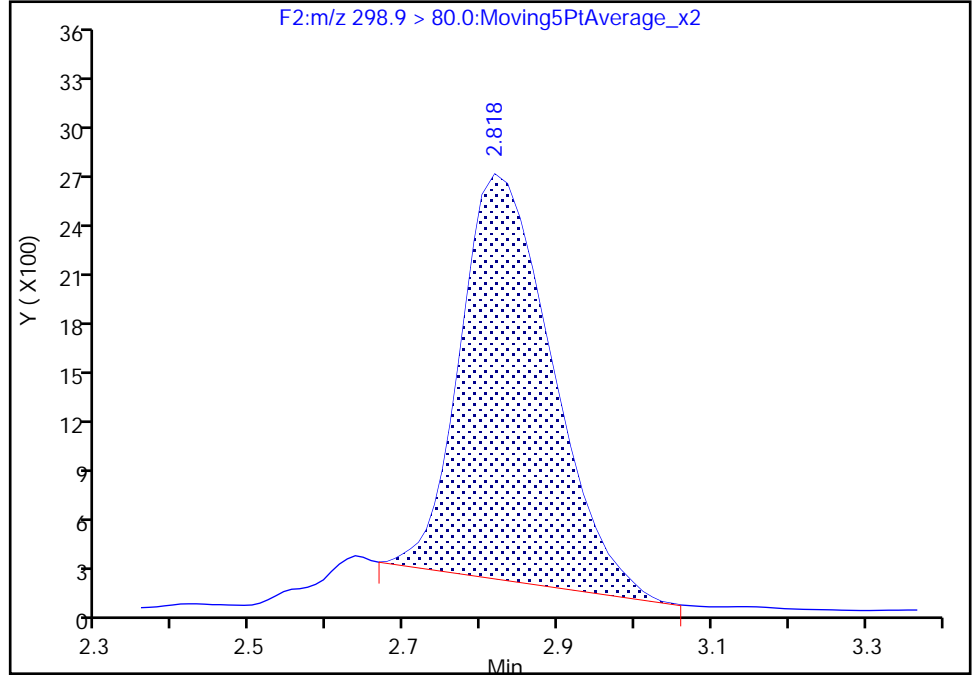
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A07.d
Injection Date: 17-Oct-2018 13:35:57 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

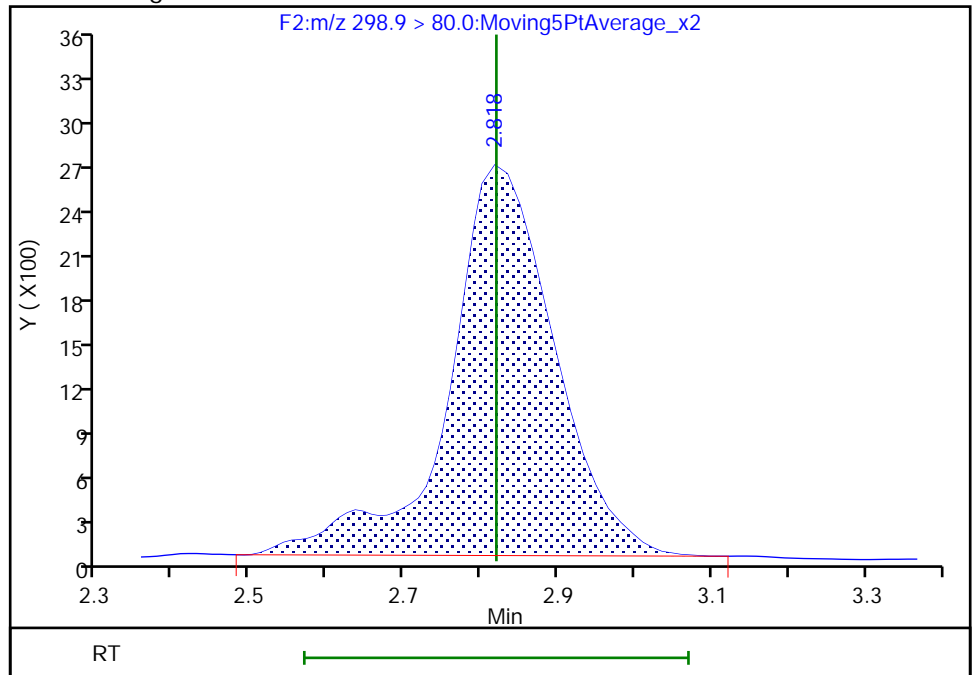
RT: 2.82
Area: 20106
Amount: 1.776415
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 24774
Amount: 2.031836
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:45:22
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

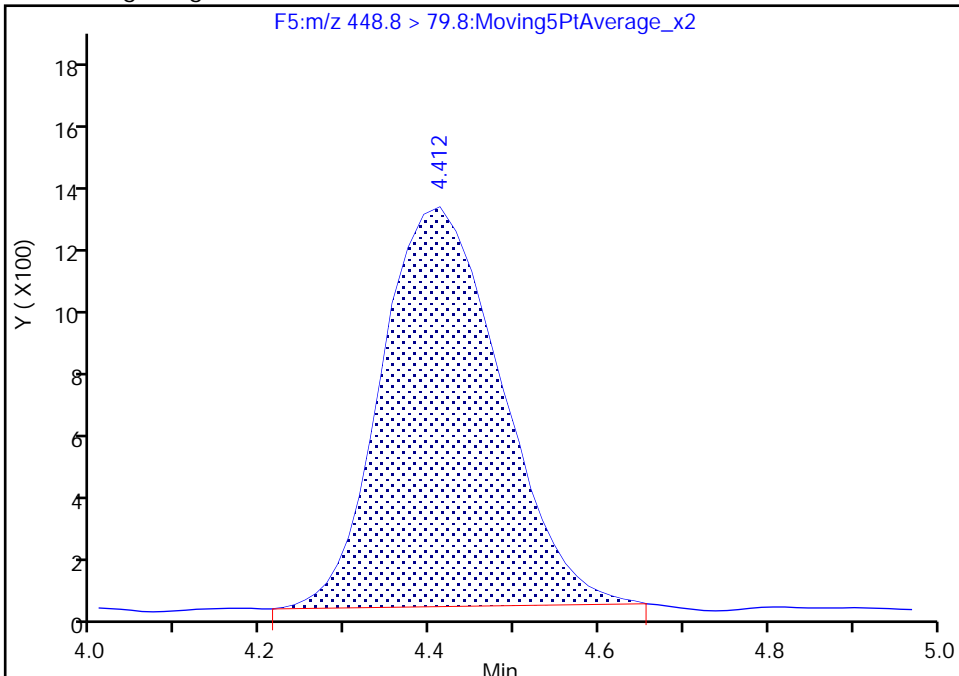
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A07.d
Injection Date: 17-Oct-2018 13:35:57 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

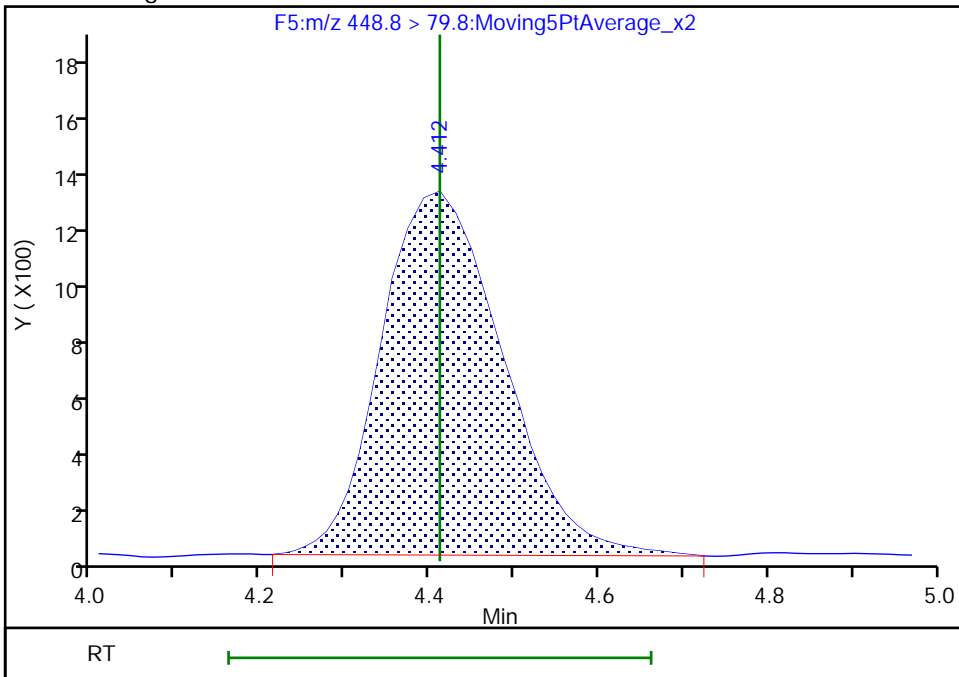
RT: 4.41
Area: 12137
Amount: 1.827602
Amount Units: ng/ml

Processing Integration Results



RT: 4.41
Area: 12449
Amount: 1.862780
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:45:36
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 17-Oct-2018 13:51:56 ALS Bottle#: 0 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-008 IC 3
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:19 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 14:47:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.343	2.339	0.004	1.000	668312	45.9	91.8	428	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.347	2.339	0.008	1.002	62168	5.30		106	167	M
D 3 13C5 PFPeA	267.7 > 222.6	2.760	2.754	0.006	1.000	428936	46.5	93.0	2305	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.760	2.754	0.006	1.000	125927	5.15		103	283	M
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.818	0.0	1.000	315382	41.4	89.0	321	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.818	2.820	-0.002	1.000	64865	5.48		110	547	M
D 7 13C2 PFHxA	314.8 > 269.6	3.177	3.172	0.005	1.000	833740	50.2	100	1148	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.177	3.174	0.003	1.000	84410	4.88		97.6	1517	
D 9 13C4 PFHpA	366.9 > 321.8	3.703	3.702	0.001	1.000	1564164	51.4	103	3108	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.703	3.705	-0.002	1.000	154111	5.04		101	404	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	411523	46.7	98.8	144	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.748	3.749	-0.001	1.000	68847	4.96		99.3	234	
D 13 M2-6:2 FTS	428.6 > 408.6	4.342	4.325	0.017	1.000	108629	40.0	84.2	573	
14 1H,1H,2H,2H-perfluorooctanesulfoni										M
426.6 > 406.6	4.330	4.330	0.0	0.997	12494	5.99		120	203	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	1170517	50.4		101	1326	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	122430	5.28		106	696	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1238655	50.0			763	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.412	4.412	0.0	0.856	38707	5.23		105	322	M
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1526778	48.7		97.4	856	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	177481	5.29		106	537	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.168	5.162	0.006	1.003	38423	4.79		95.8	276	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.161	-0.007	1.000	370825	47.6		99.5	484	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.902	5.891	0.011	1.000	334752	45.5		94.9	3496	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.902	5.896	0.006	1.000	27432	4.87		97.3	282	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1714210	53.0		106	22419	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.926	0.0	1.000	169098	4.89		97.7	785	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	385533	46.7		93.4	1090	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.295	6.283	0.012	1.003	42564	5.08		102	66.3	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.652	6.638	0.014	1.000	351207	50.1		100	2459	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.670	6.654	0.016	1.003	34693	5.13		103	493	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.674	-0.004	1.294	41490	5.11		102	536	
D 32 13C2 PFUnA										
564.8 > 519.8	6.688	6.682	0.006	1.000	1737587	51.6		103	3291	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.685	0.003	1.000	182039	5.11		102	781	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	731745	48.7		97.4	5883	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.959	6.963	-0.004	1.000	62033	5.01		100	745	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	182703	5.07		101	1557	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	2099298	49.3		98.6	8891	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.979	7.979	0.0	0.937	1491670	5.16		103	739	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1900412	48.7		97.3	685	
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.530	8.523	0.007	1.002	196056	5.29		106	1330	
712.8 > 168.8	8.514	8.523	-0.009	1.000	39736		4.93(0.00-0.00)	106	288	
712.8 > 218.8	8.530	8.523	0.007	1.002	26023		7.53(0.00-0.00)	106	88.6	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L3_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d

Injection Date: 17-Oct-2018 13:51:56

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

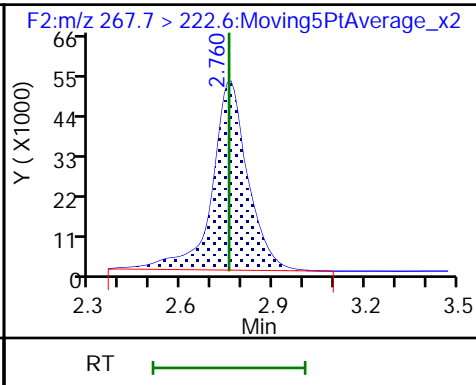
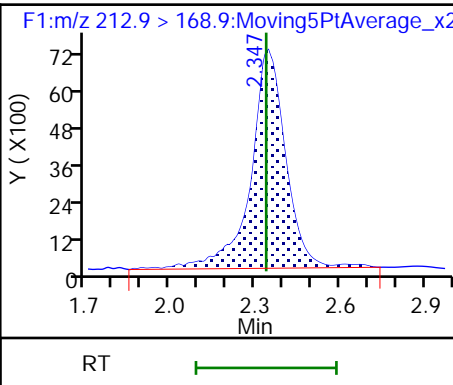
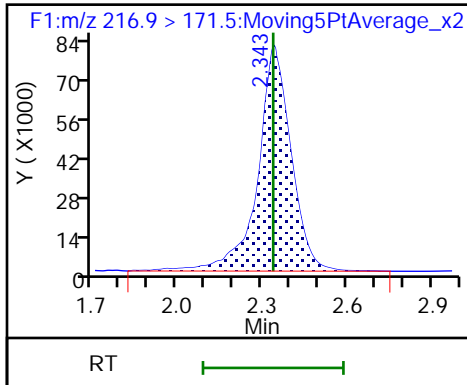
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

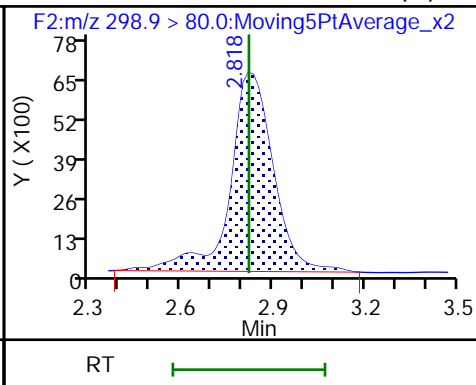
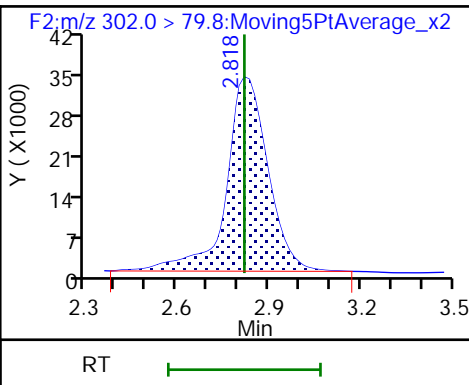
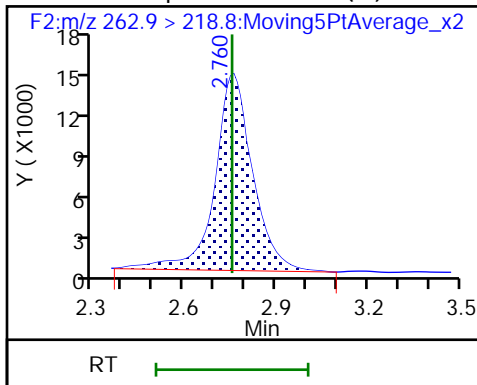
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

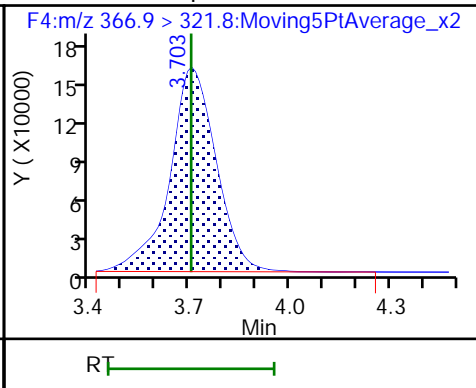
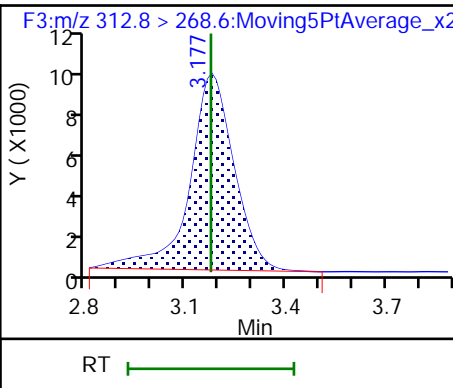
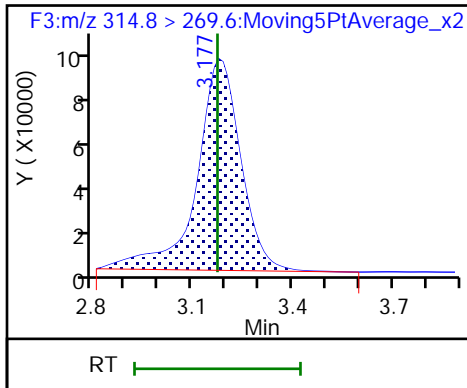
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

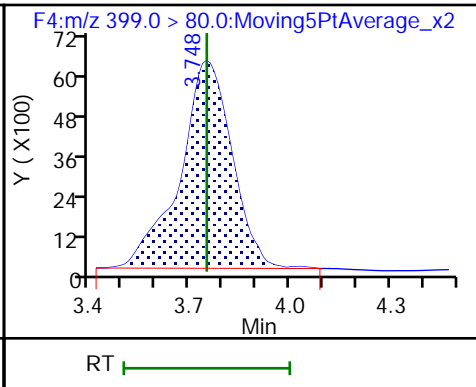
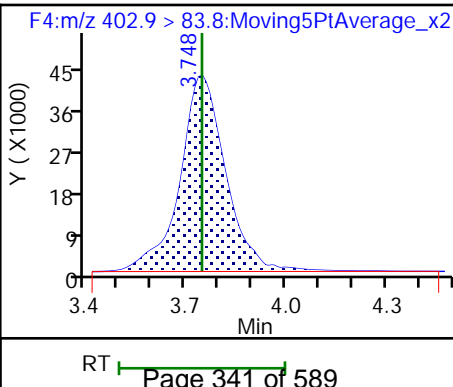
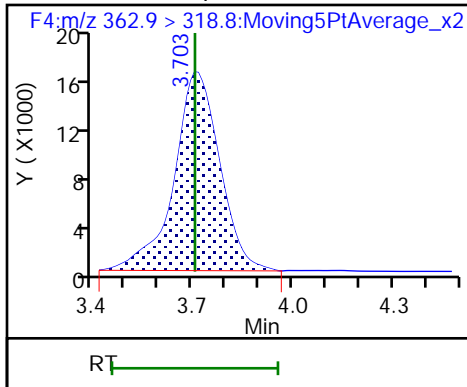
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

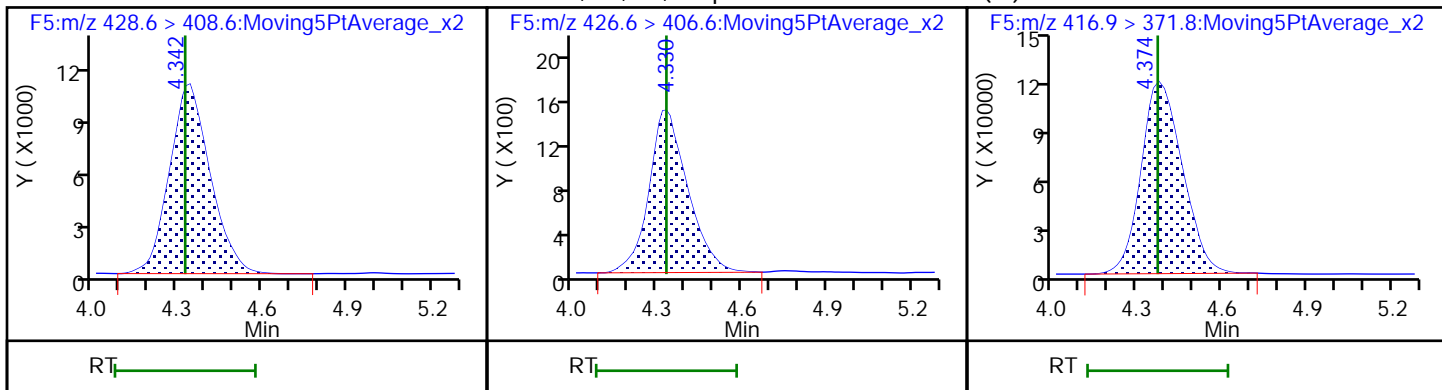
D 11 18O2 PFHxS

12 Perfluorohexanesulfonic acid



D 13 M2-6:2 FTS

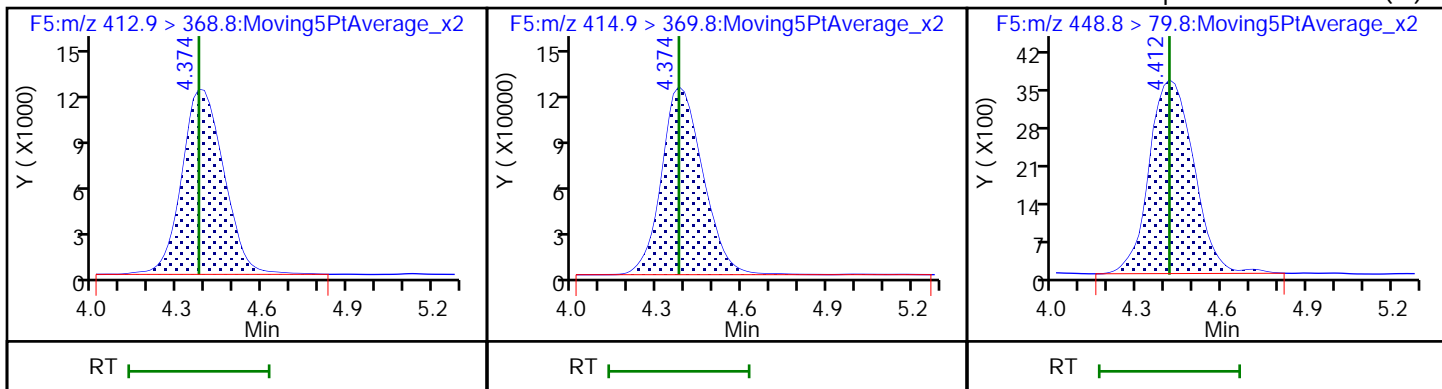
14 1H,1H,2H,2H-perfluorooctanesulfon(DM) 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

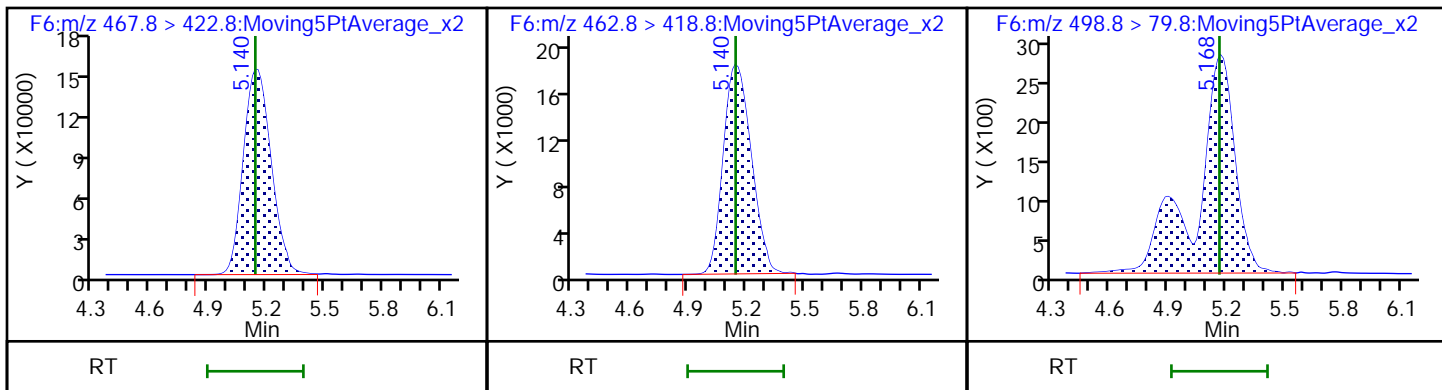
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid

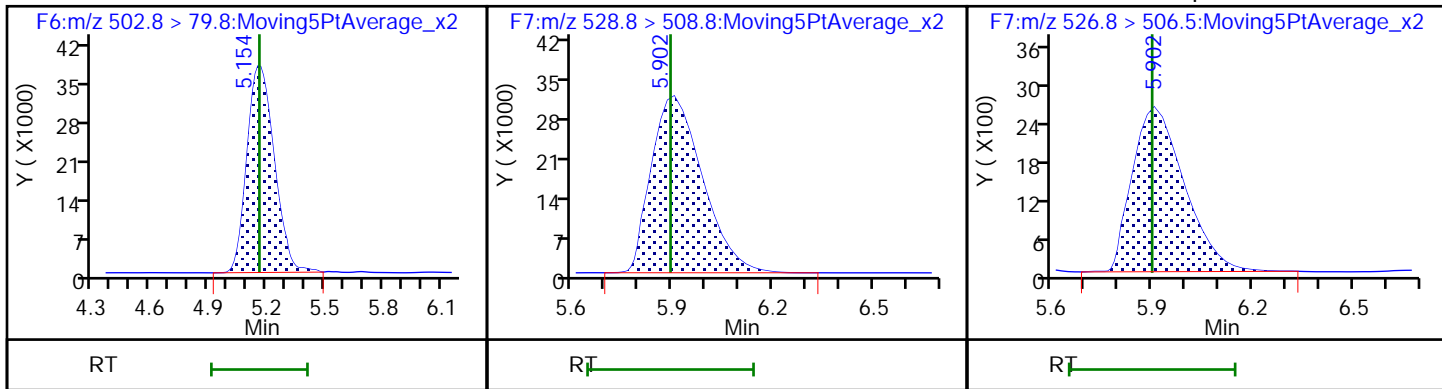
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

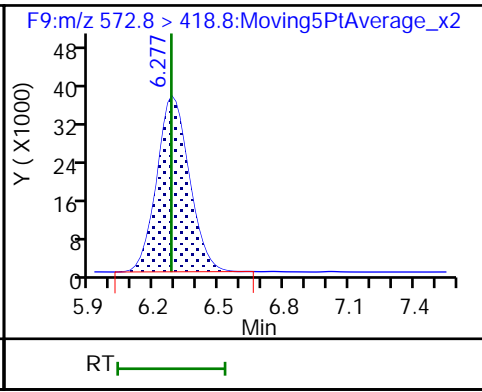
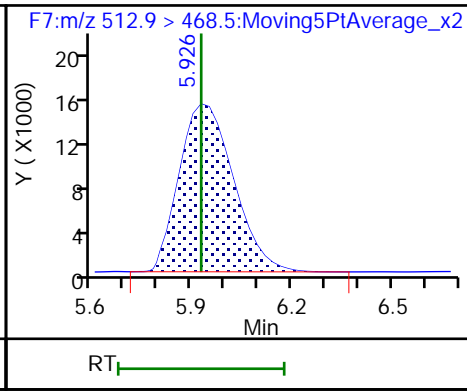
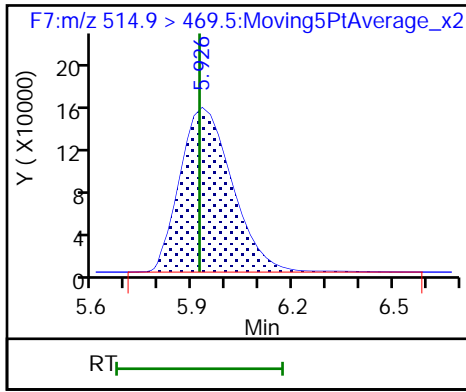
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

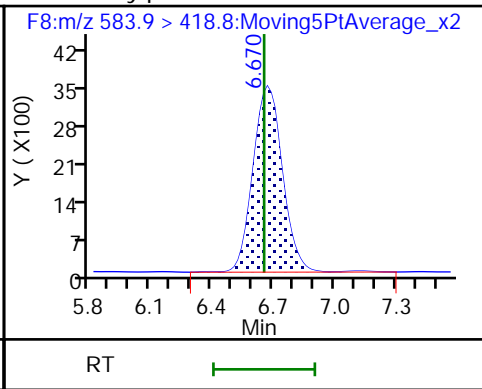
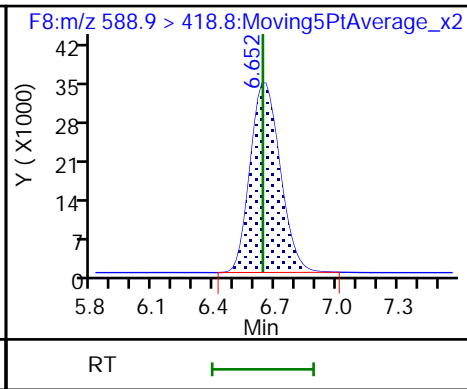
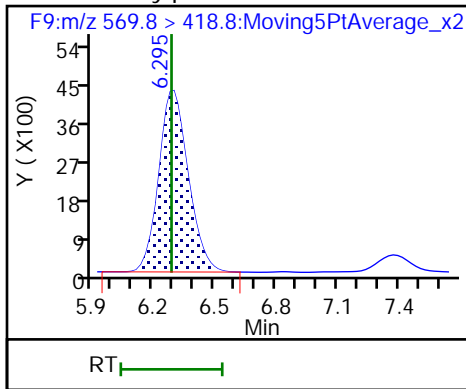
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

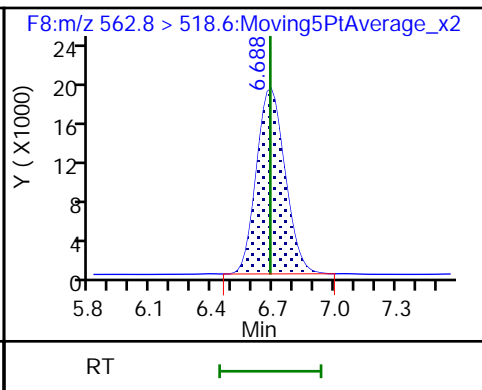
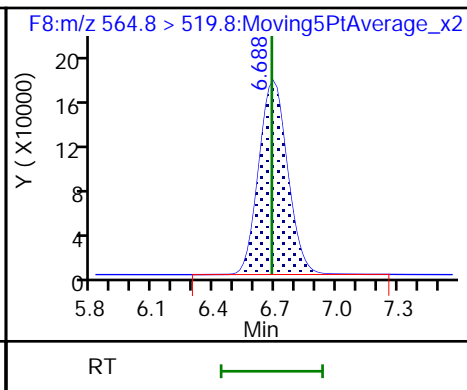
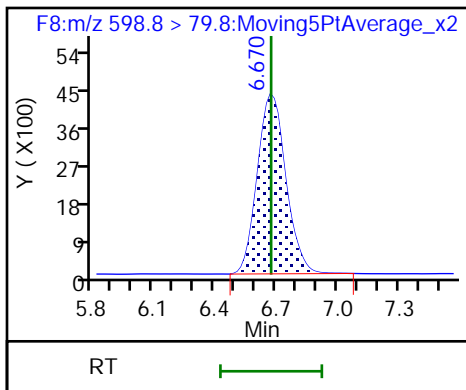
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

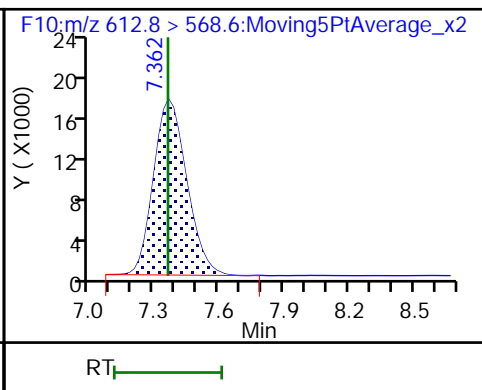
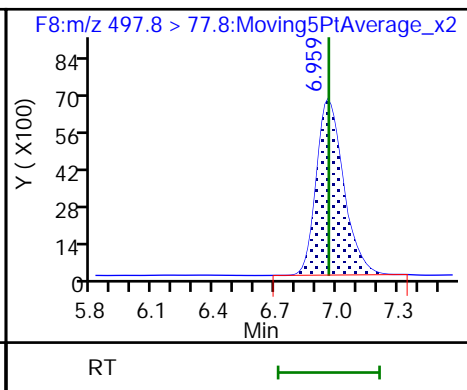
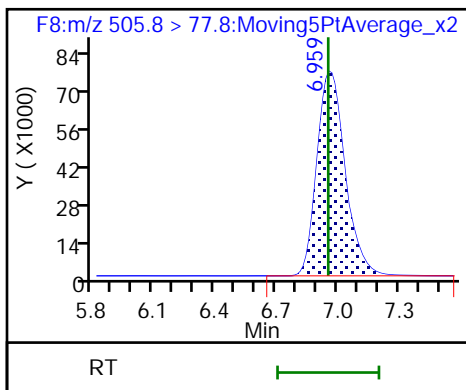
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

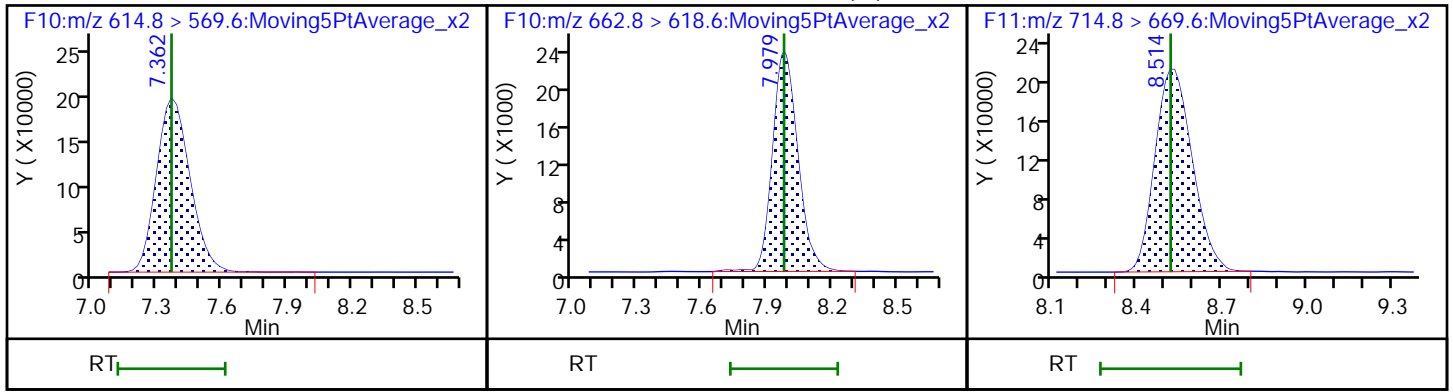
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid (M)

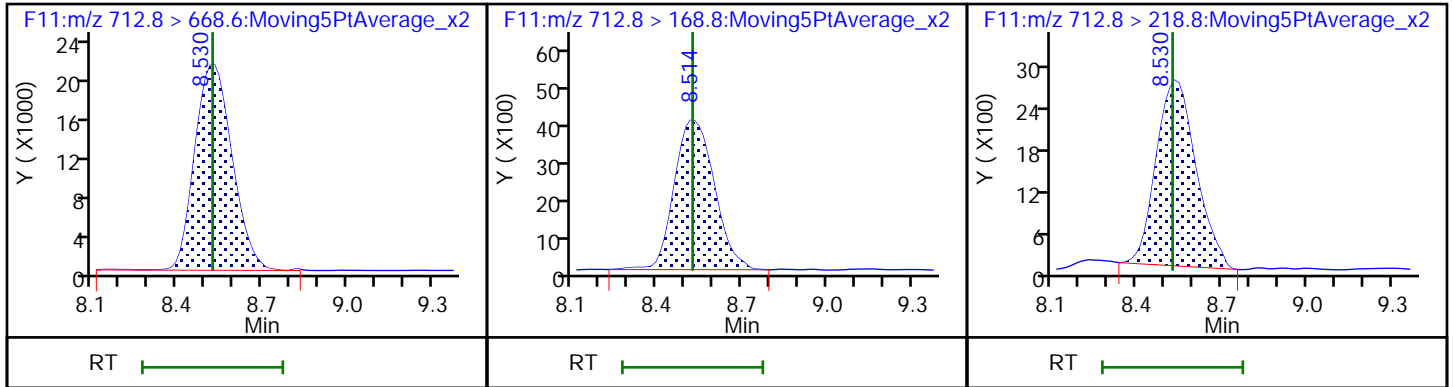
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid (M)



TestAmerica Burlington

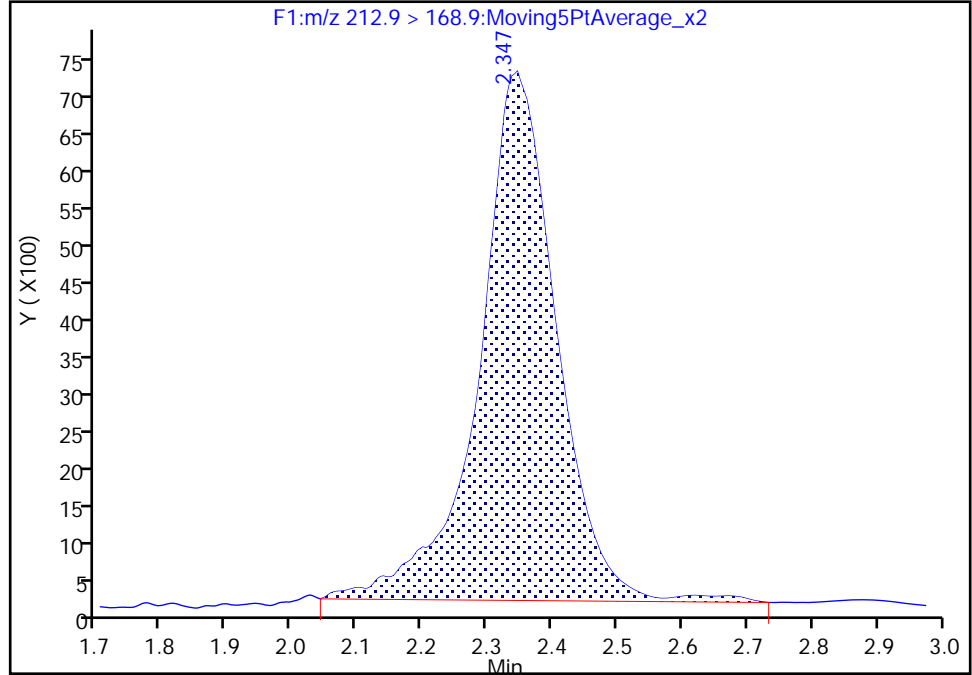
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d
Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

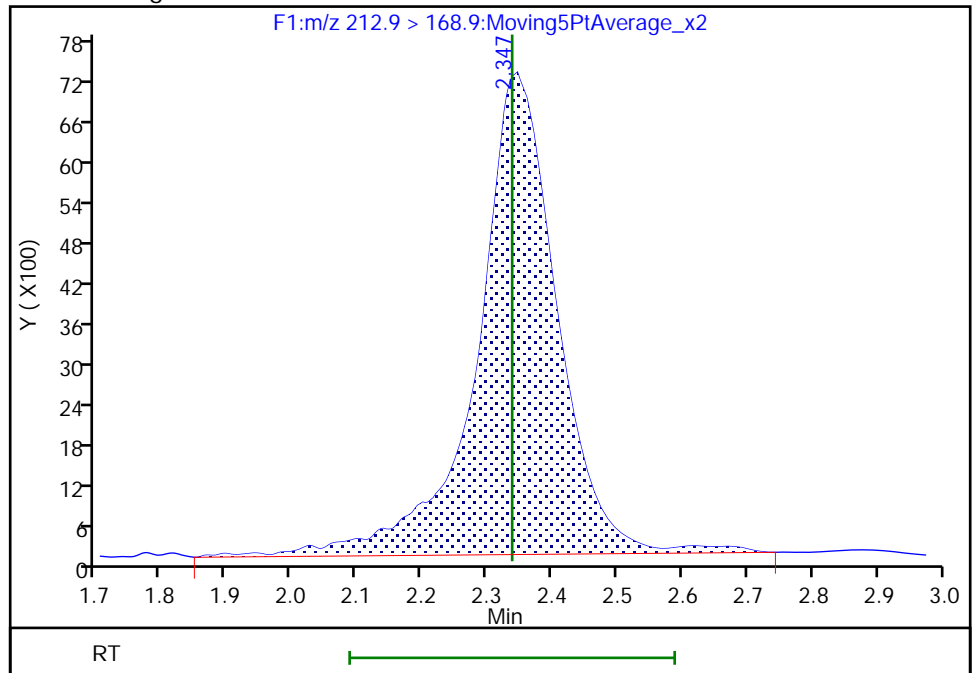
RT: 2.35
Area: 59256
Amount: 6.633008
Amount Units: ng/ml

Processing Integration Results



RT: 2.35
Area: 62168
Amount: 5.299140
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:47:12
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

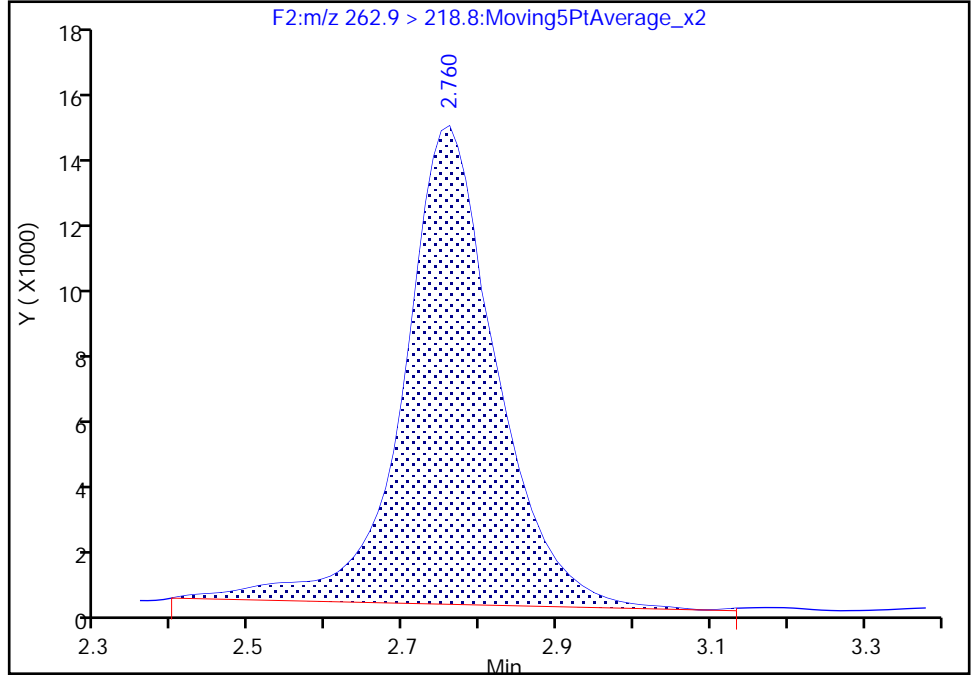
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d
Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

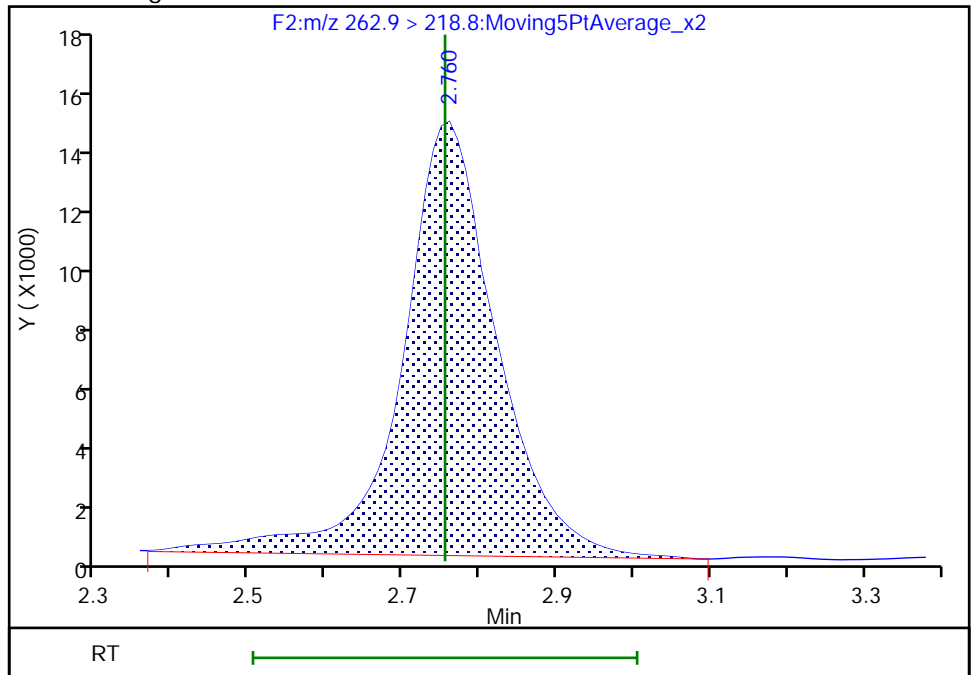
RT: 2.76
Area: 123570
Amount: 4.912651
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 125927
Amount: 5.154278
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:47:05
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

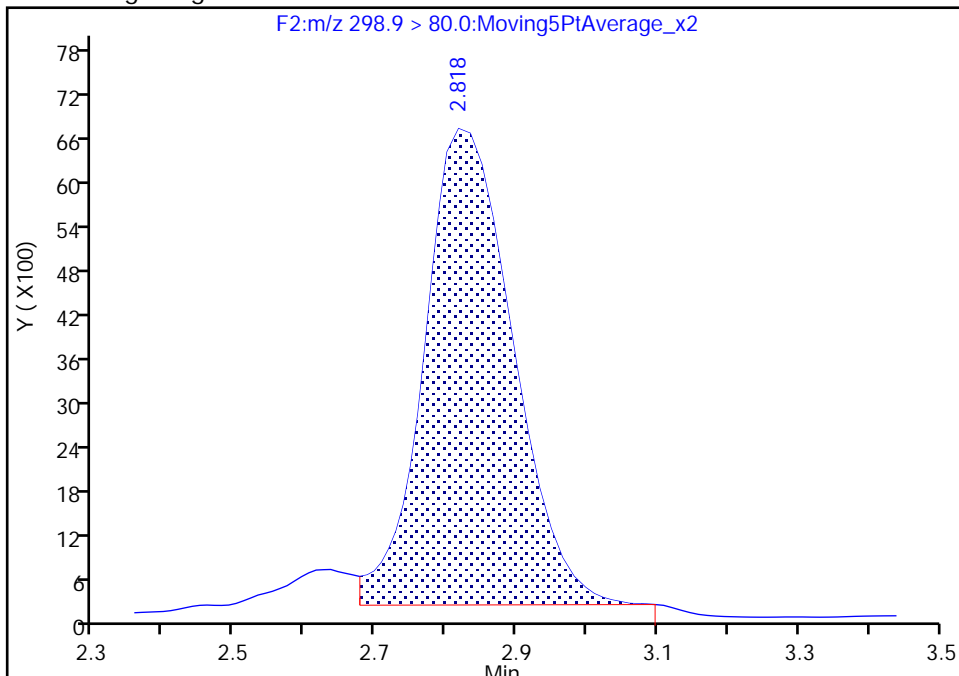
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d
Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

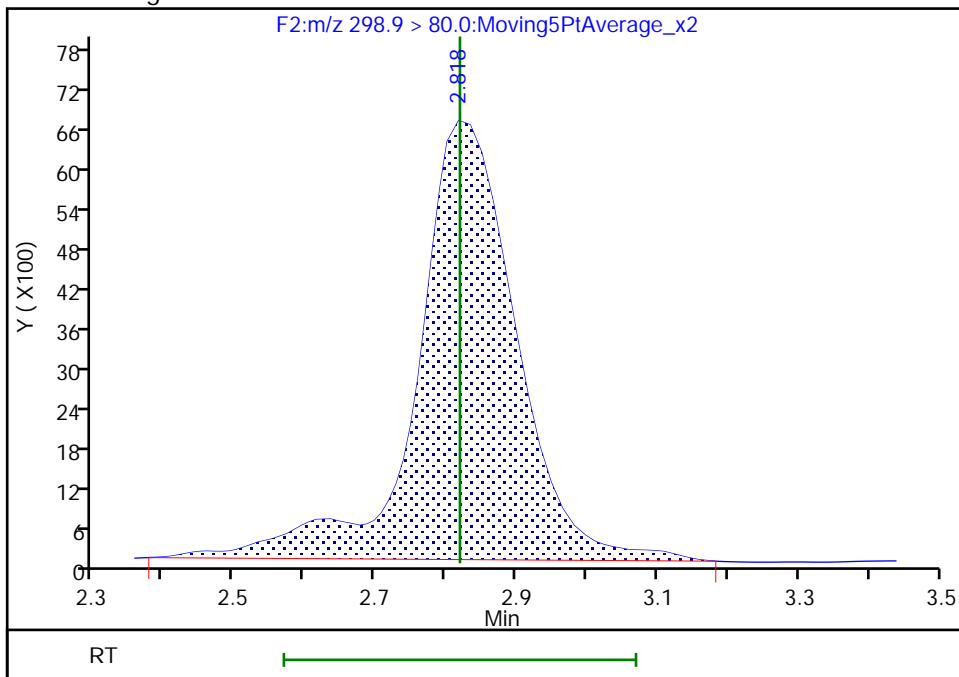
RT: 2.82
Area: 56330
Amount: 4.699740
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 64865
Amount: 5.480563
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:46:55
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

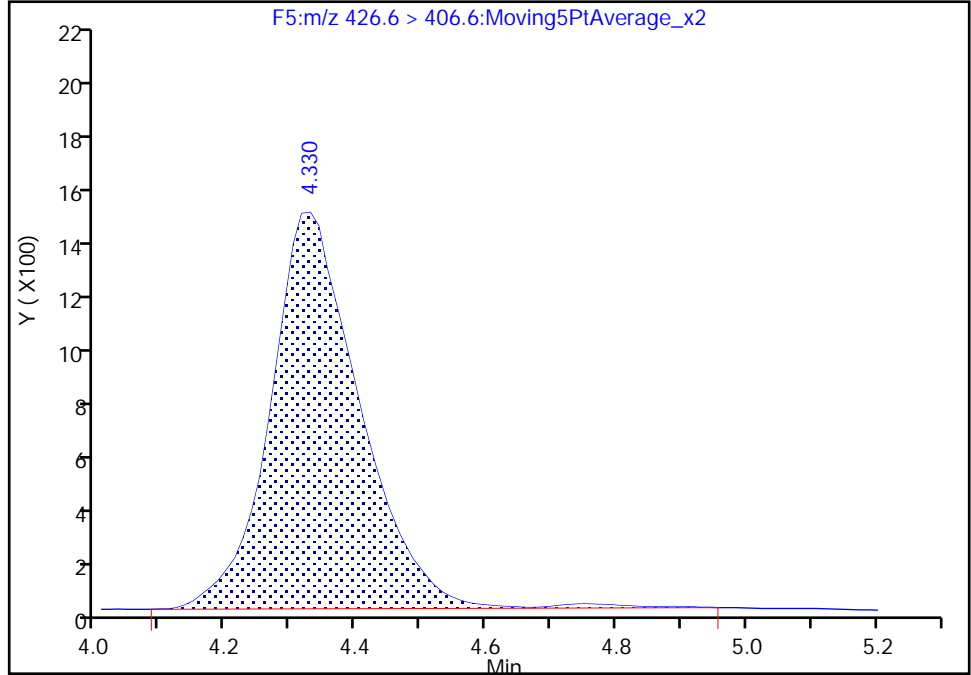
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d
Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

14 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

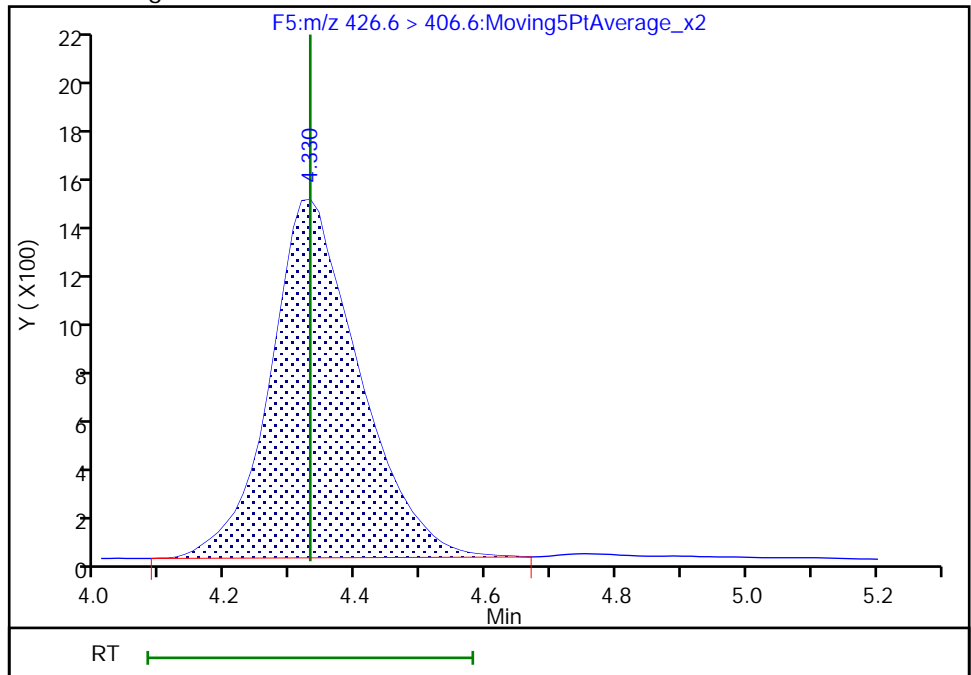
RT: 4.33
Area: 13642
Amount: 5.503637
Amount Units: ng/ml

Processing Integration Results



RT: 4.33
Area: 13494
Amount: 5.993161
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:46:44
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

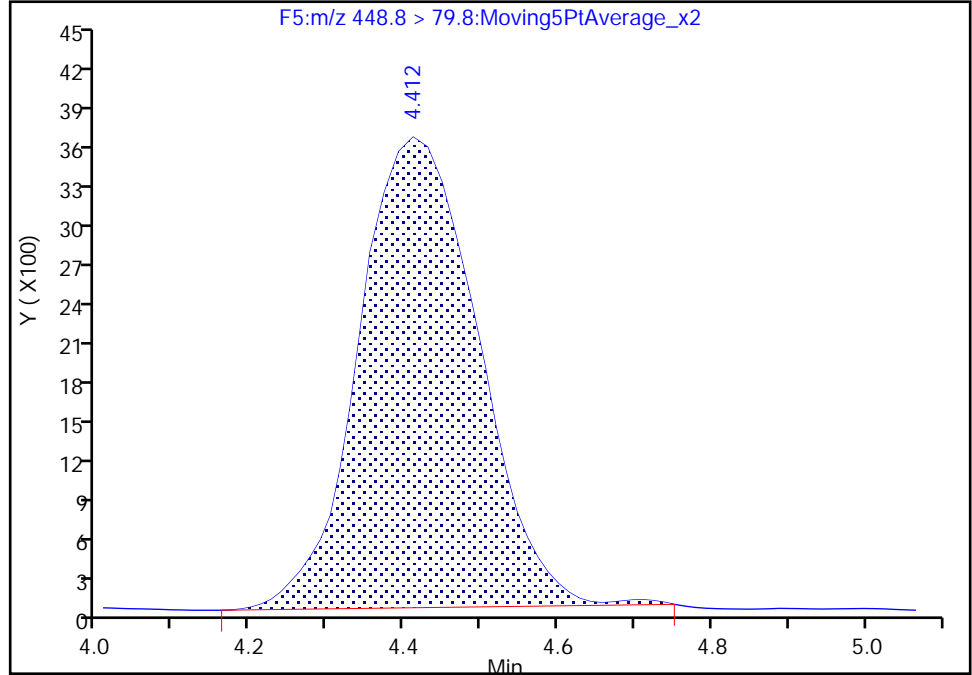
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Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

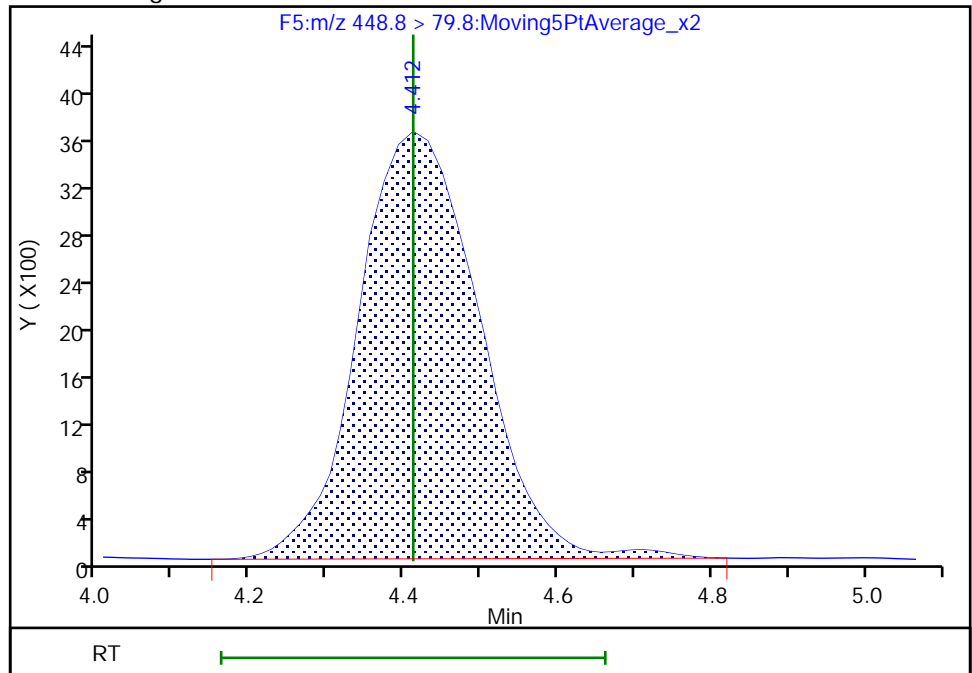
RT: 4.41
Area: 38043
Amount: 5.185811
Amount Units: ng/ml

Processing Integration Results



RT: 4.41
Area: 38707
Amount: 5.226096
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:46:37
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington

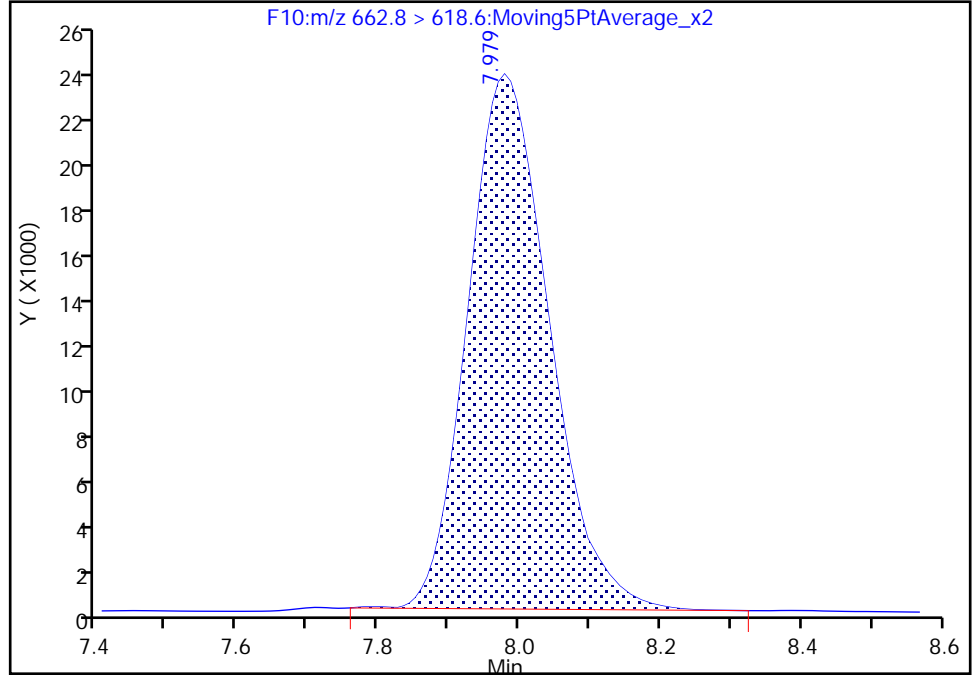
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A08.d
Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

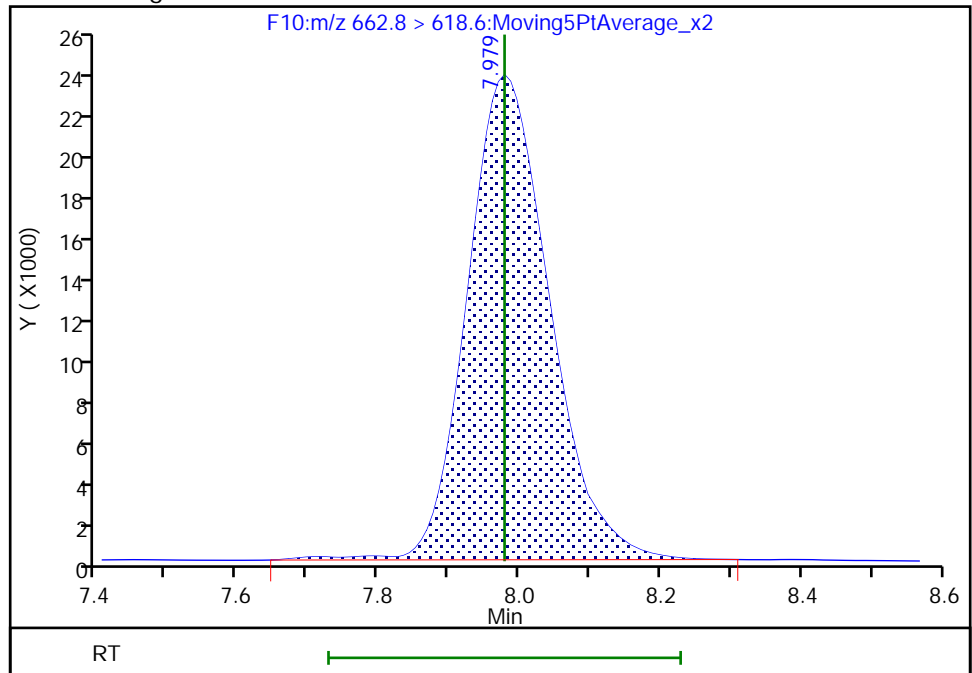
RT: 7.98
Area: 188835
Amount: 5.075920
Amount Units: ng/ml

Processing Integration Results



RT: 7.98
Area: 191672
Amount: 5.159116
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:46:21
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

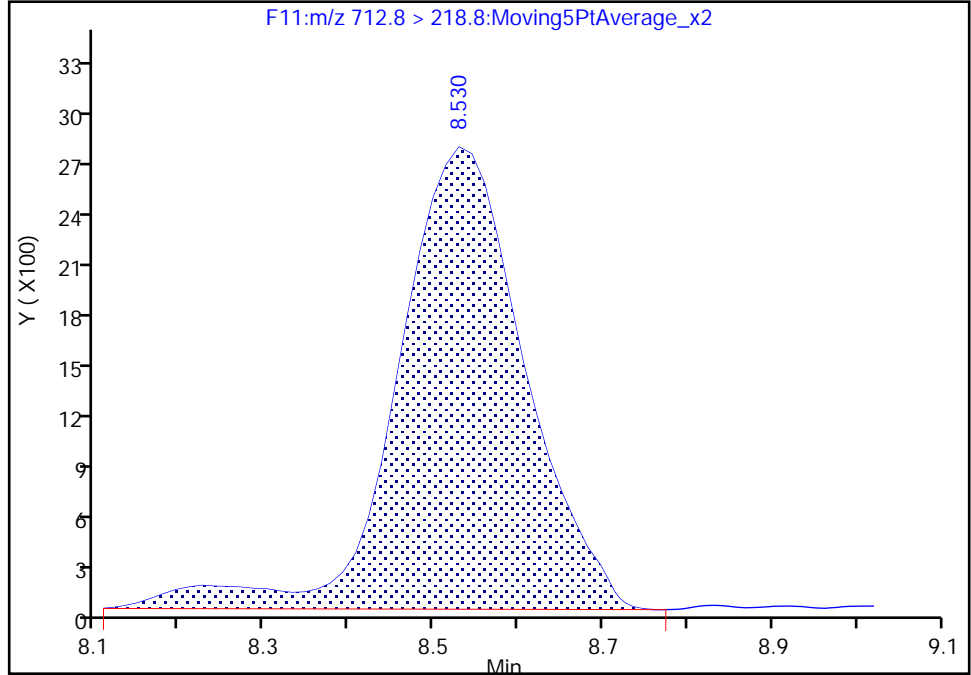
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Injection Date: 17-Oct-2018 13:51:56 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

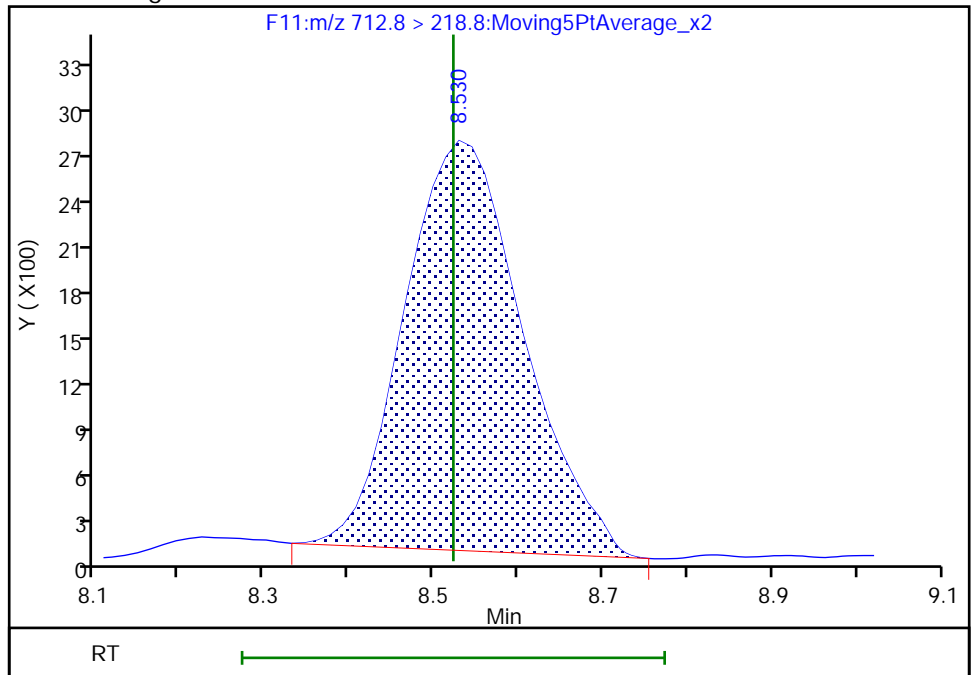
RT: 8.53
Area: 28479
Amount: 5.154109
Amount Units: ng/ml

Processing Integration Results



RT: 8.53
Area: 26023
Amount: 5.291698
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:46:16
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A09.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 17-Oct-2018 14:07:54 ALS Bottle#: 0 Worklist Smp#: 9
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-009 ICIS
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:23 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 15:04:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.322	2.336	-0.014	1.000	679847	43.4		86.8	2012	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.330	2.337	-0.007	1.003	118688	10.1		101	330	M
D 3 13C5 PFPeA										
267.7 > 222.6	2.750	2.754	-0.004	1.000	434921	43.8		87.6	2354	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.750	2.754	-0.004	1.000	257221	10.4		104	596	
D 6 13C3 PFBS										M
302.0 > 79.8	2.801	2.814	-0.013	1.000	338617	41.3		88.8	391	M
5 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.818	2.820	-0.002	1.006	128344	10.1		101	319	
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.172	-0.008	1.000	832949	46.6		93.1	1712	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.177	3.174	0.003	1.004	176119	10.2		102	1330	
D 9 13C4 PFHpA										
366.9 > 321.8	3.692	3.702	-0.010	1.000	1500566	45.8		91.6	813	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.703	3.705	-0.002	1.003	297831	10.2		102	4485	
D 11 18O2 PFHxS										
402.9 > 83.8	3.737	3.747	-0.010	1.000	403737	42.6		90.0	101	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.748	3.749	-0.001	1.003	123878	9.30		93.0	221	
D 13 M2-6:2 FTS										
428.6 > 408.6	4.317	4.325	-0.008	1.000	112280	38.4		80.8	667	
14 1H,1H,2H,2H-perfluorooctanesulfoni										
426.6 > 406.6	4.317	4.330	-0.013	1.000	25085	10.8		108	369	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.355	4.370	-0.015	1.000	1167546	46.7		93.3	1342	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.004	220137	9.52		95.2	2252	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1333110	50.0			1475	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.412	4.412	0.0	0.856	70999	9.93		99.3	284	
D 20 13C5 PFNA										
467.8 > 422.8	5.127	5.140	-0.013	1.000	1540942	45.7		91.3	1795	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.003	309354	9.13		91.3	850	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.161	-0.007	1.000	77495	10.0		100	354	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.161	-0.007	1.000	358054	42.7		89.2	667	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.891	-0.009	1.000	355854	44.9		93.8	4366	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.882	5.896	-0.014	1.000	69878	11.7		117	481	
D 26 13C2 PFDA										
514.9 > 469.5	5.902	5.918	-0.016	1.000	1668807	48.0		95.9	6675	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.902	5.922	-0.020	1.000	326087	9.68		96.8	4335	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.275	-0.016	1.000	380957	42.9		85.7	1911	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.003	83136	10.0		100	206	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	366081	48.5		97.1	1830	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	66780	9.47		94.7	1095	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.652	6.670	-0.018	1.291	78955	10.1		101	991	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.682	-0.012	1.000	1734742	47.9		95.8	2145	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.682	-0.012	1.000	357513	10.0		100	2369	
D 35 13C8 FOSA										
505.8 > 77.8	6.945	6.955	-0.010	1.000	706019	43.7		87.3	4403	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.945	6.959	-0.014	1.000	123818	10.4		104	1650	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	359390	10.3		103	1933	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	2031630	44.3		88.7	3451	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.970	7.977	-0.007	0.936	263751	9.95		99.5	1545	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1870811	44.5		89.0	1385	
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.514	8.522	-0.008	1.000	362652	9.94		99.4	871	
712.8 > 168.8	8.514	8.522	-0.008	1.000	75743		4.79(0.00-0.00)	99.4	487	
712.8 > 218.8	8.514	8.522	-0.008	1.000	39667		9.14(0.00-0.00)	99.4	121	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L3A_00001

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A09.d

Injection Date: 17-Oct-2018 14:07:54

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 9

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

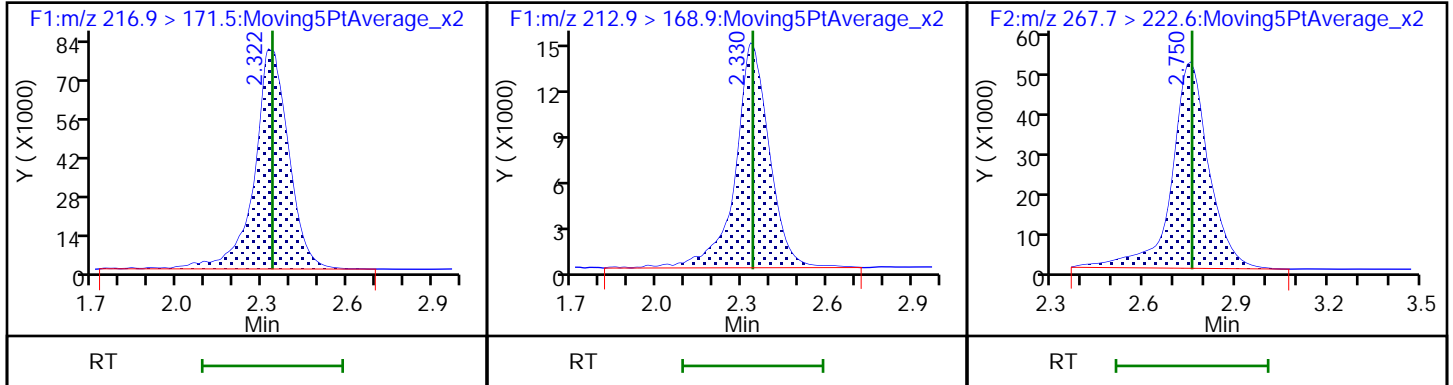
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

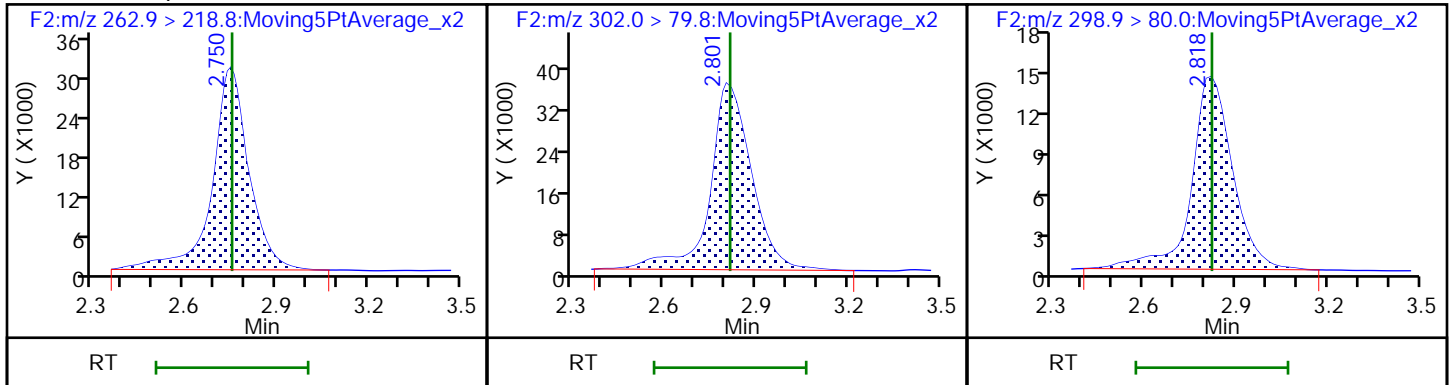
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 6 13C3 PFBS (M)

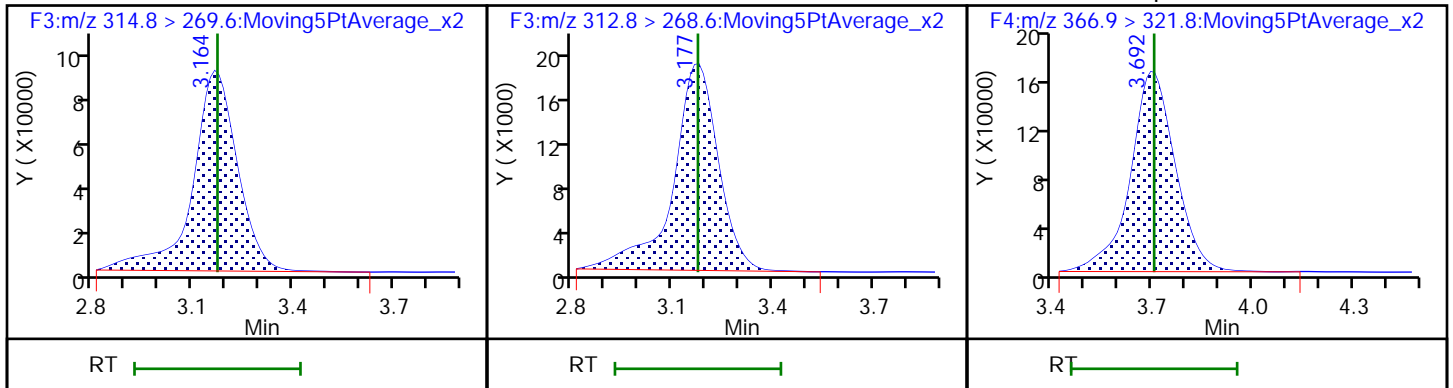
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

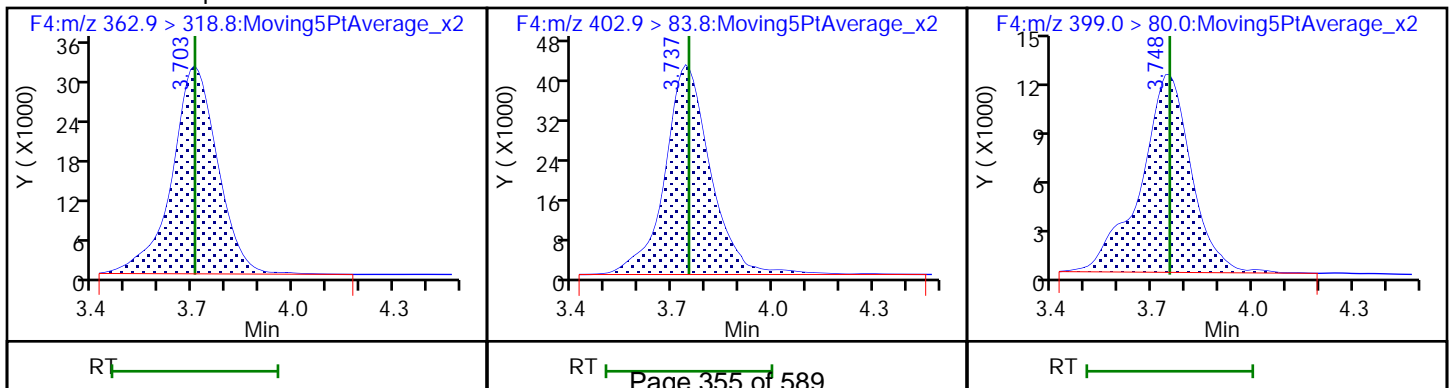
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

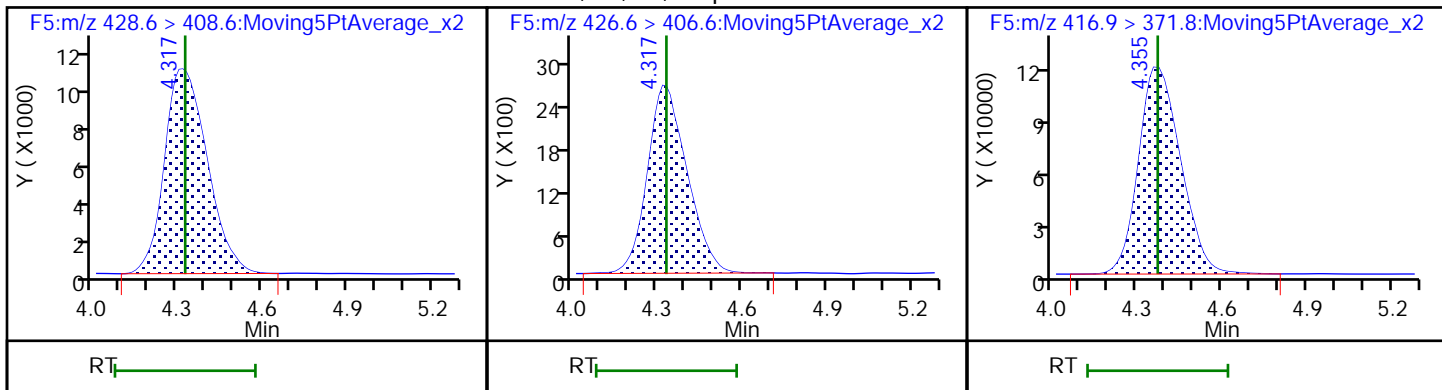
D 11 18O2 PFHxS

12 Perfluorohexanesulfonic acid



D 13 M2-6:2 FTS

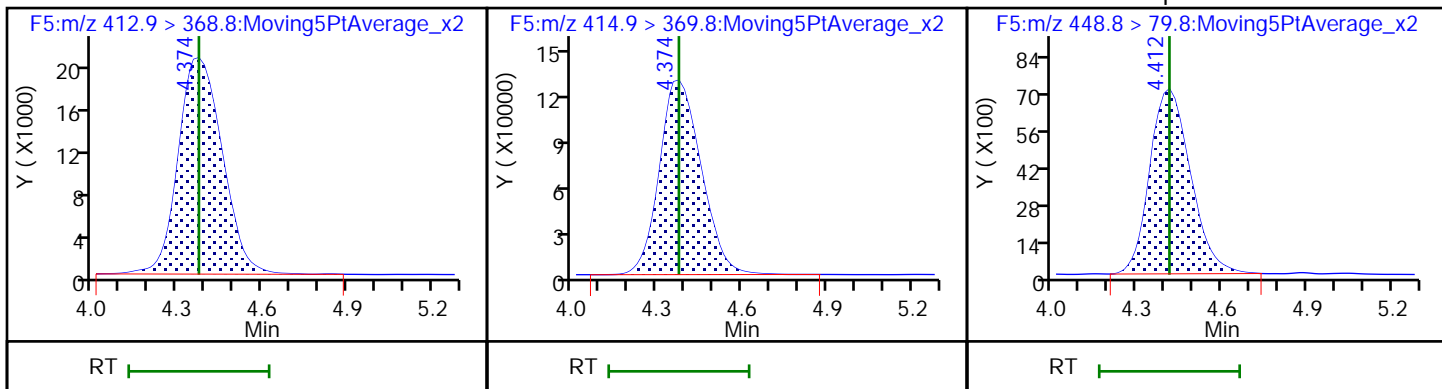
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

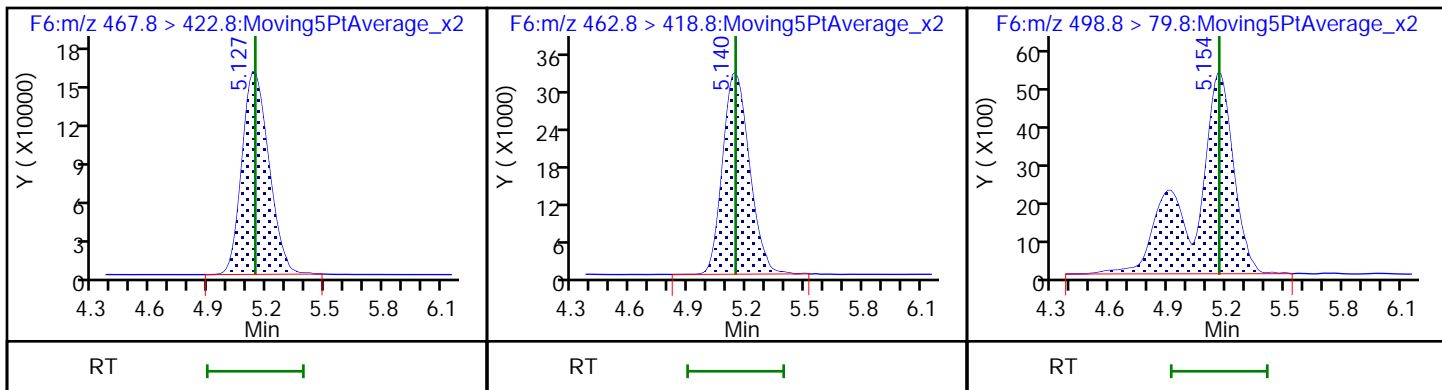
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

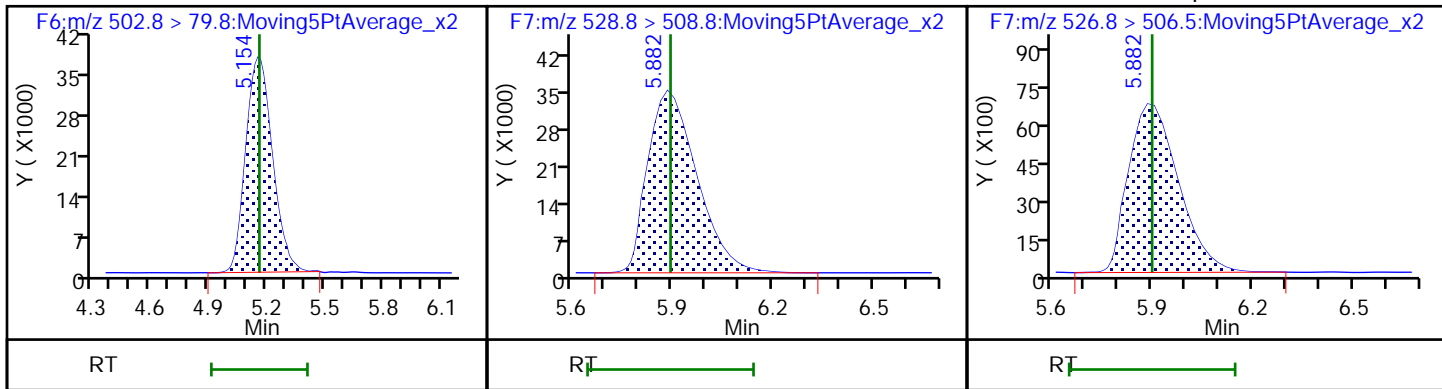
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

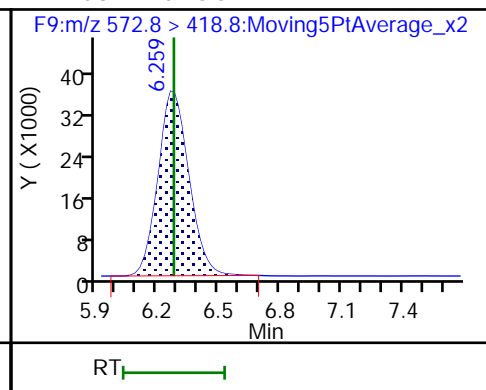
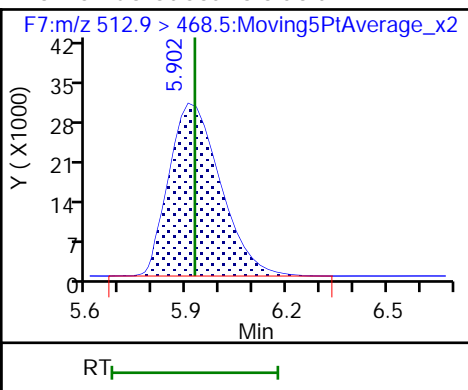
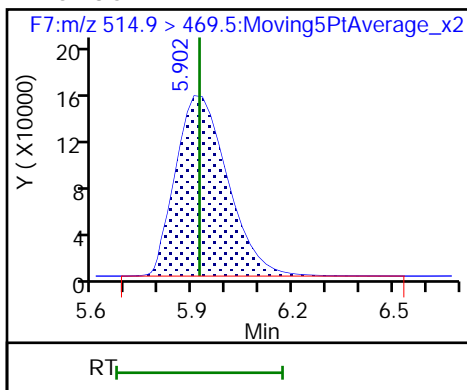
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

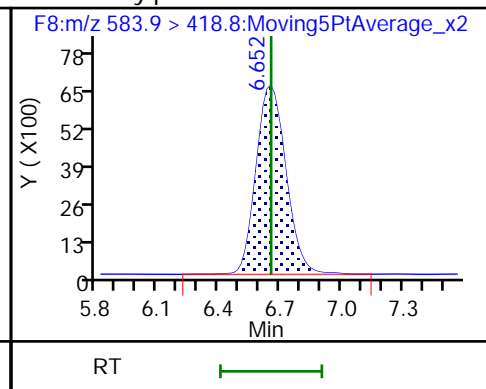
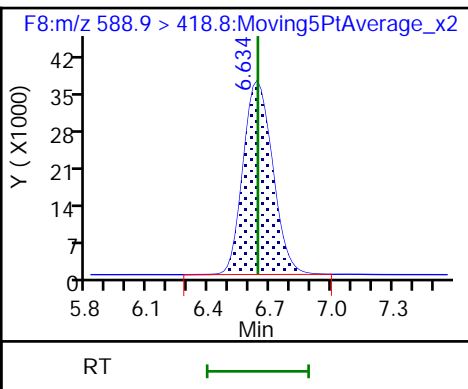
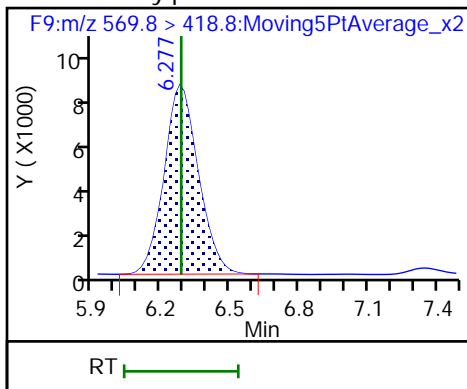
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

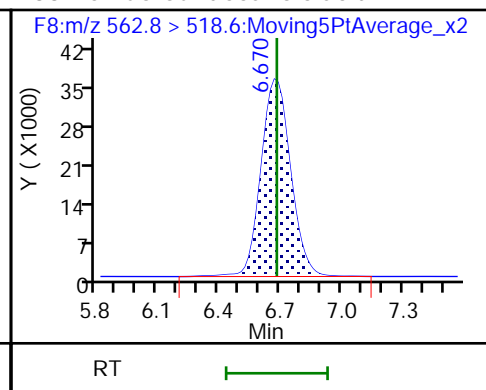
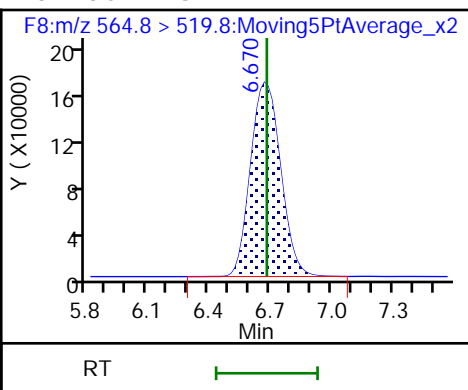
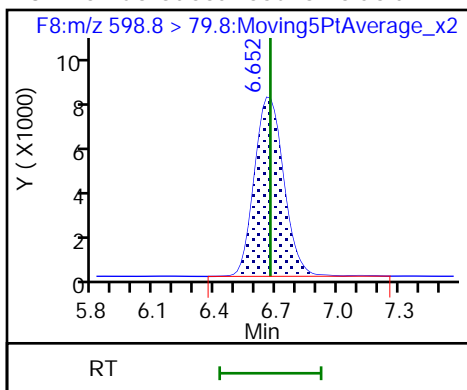
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

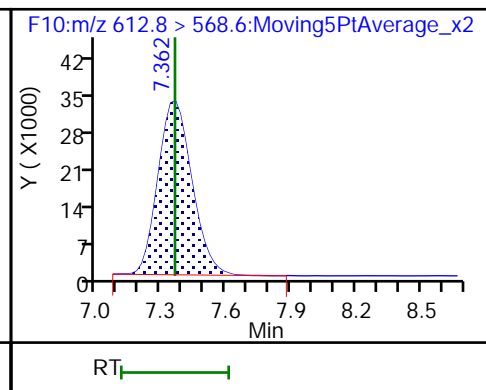
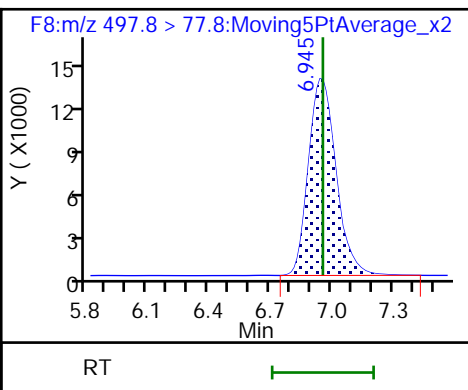
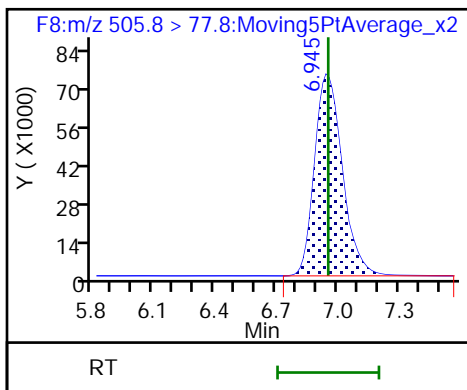
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

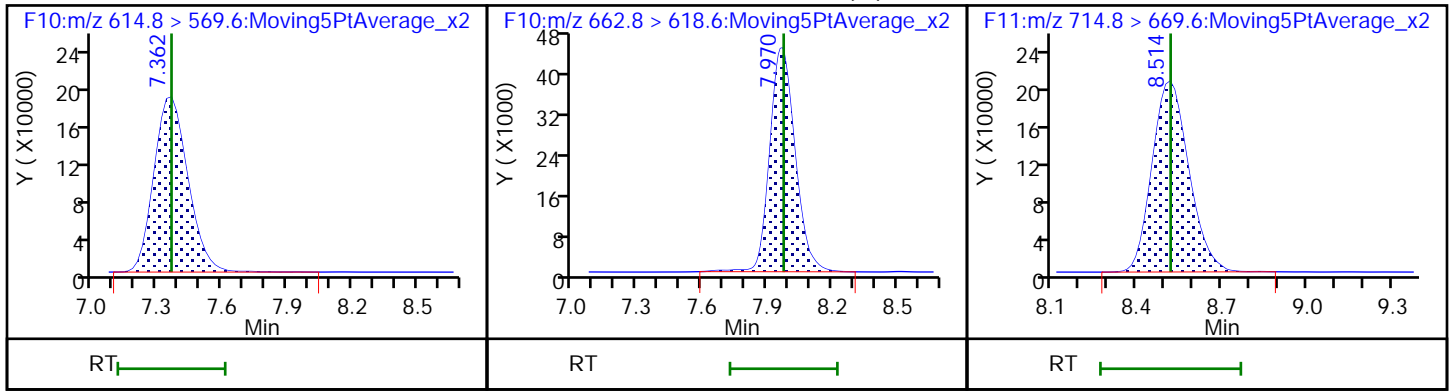
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid (M)

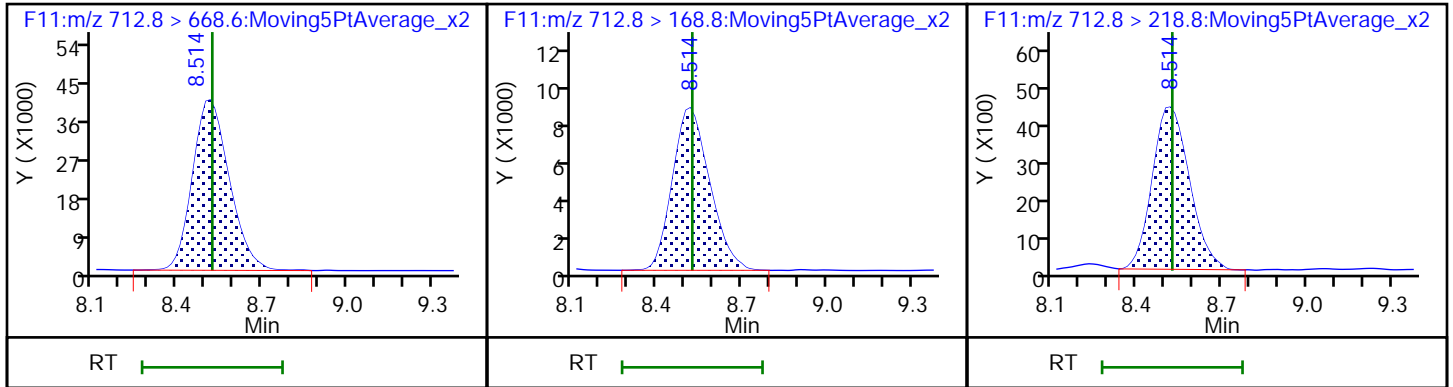
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid (M)



TestAmerica Burlington

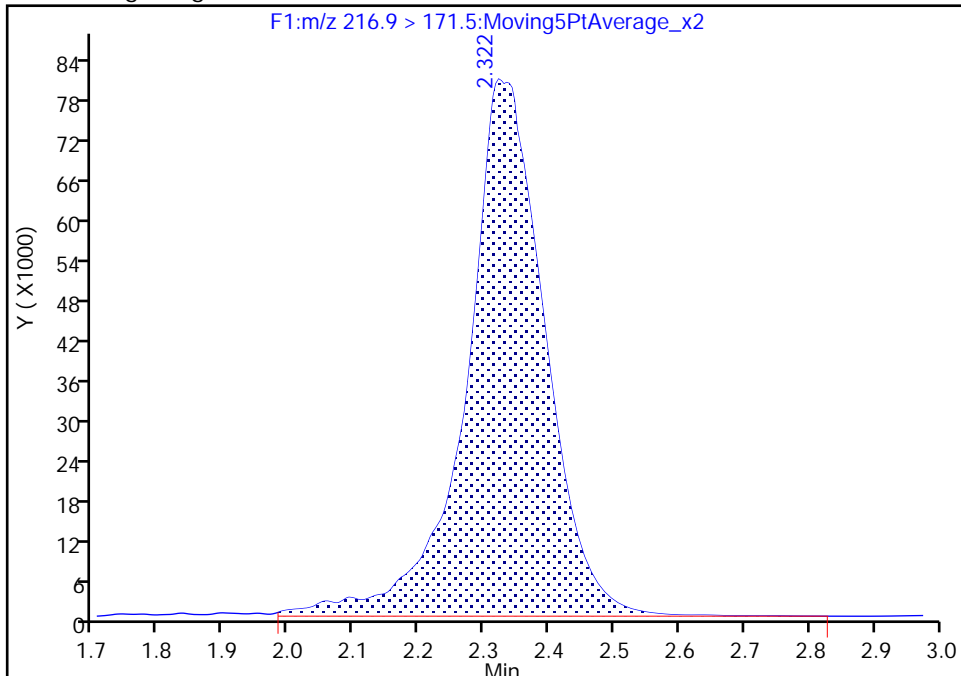
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A09.d
Injection Date: 17-Oct-2018 14:07:54 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

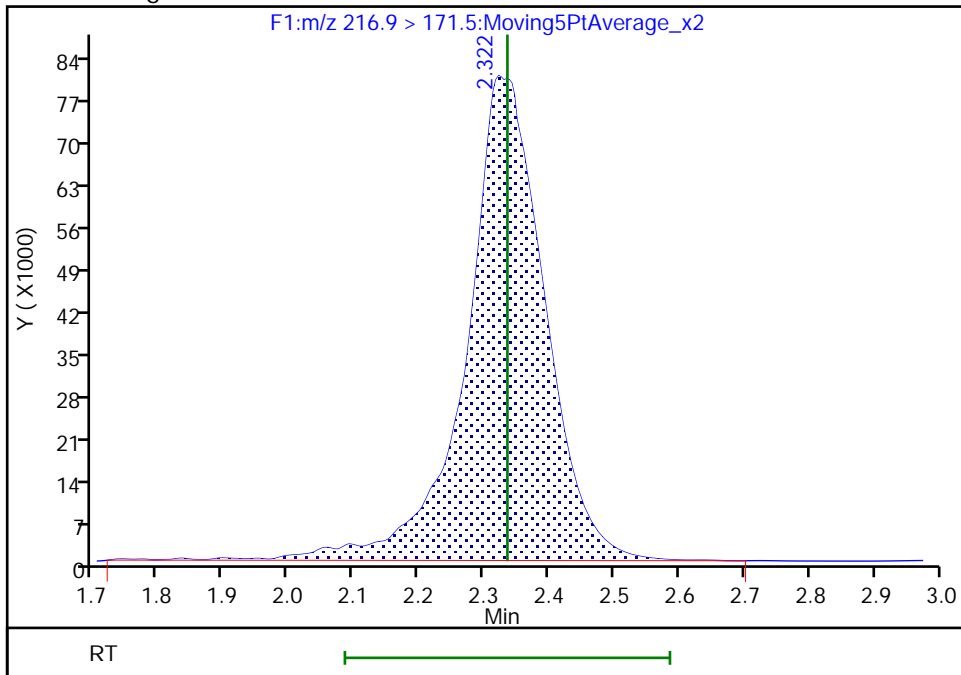
RT: 2.32
Area: 681129
Amount: 46.068003
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 679847
Amount: 43.400784
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:59:26
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

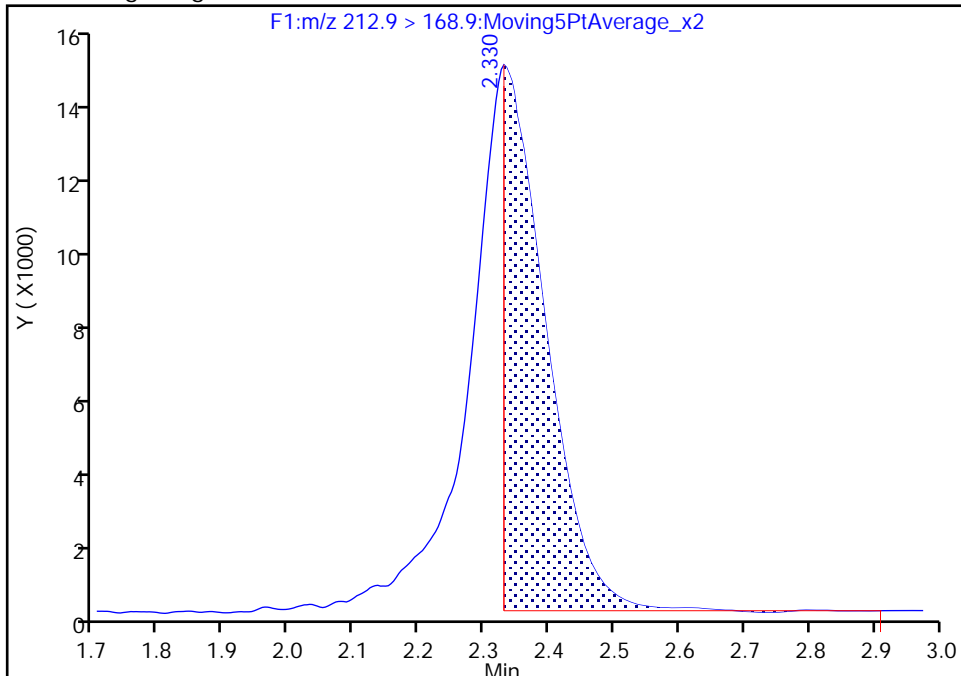
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A09.d
Injection Date: 17-Oct-2018 14:07:54 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

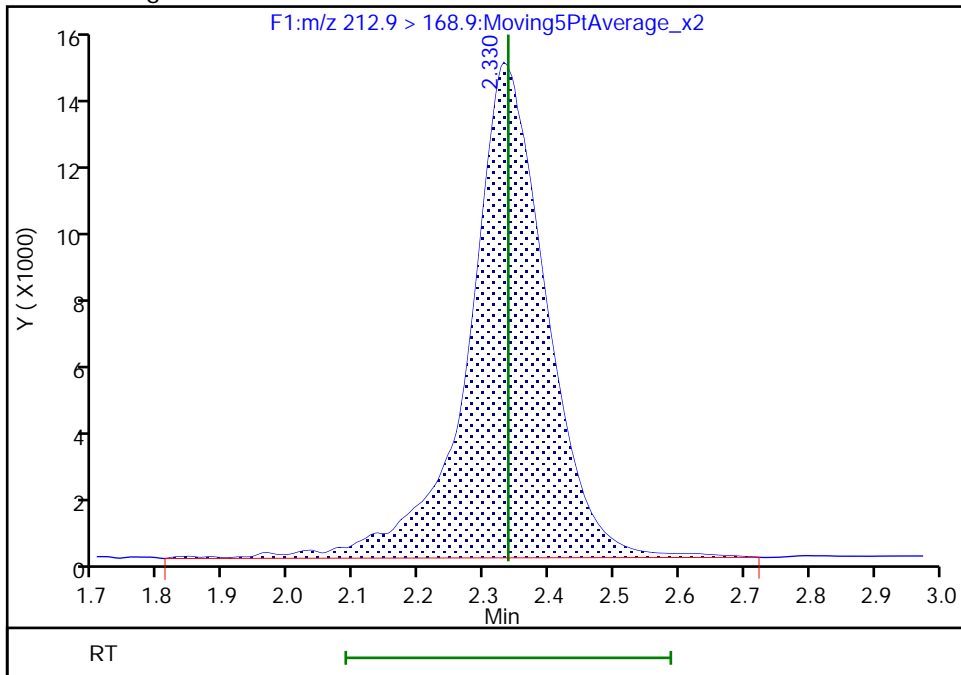
RT: 2.33
Area: 62678
Amount: 6.716263
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 118688
Amount: 10.112157
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:59:33
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

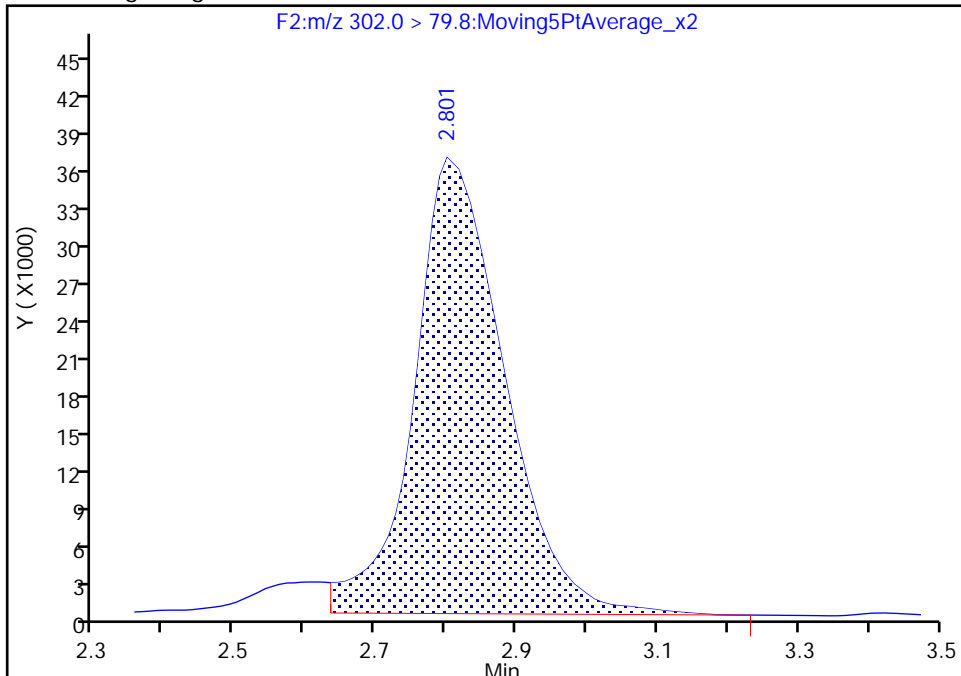
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Injection Date: 17-Oct-2018 14:07:54 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 6 13C3 PFBS, CAS: STL02337

Signal: 1

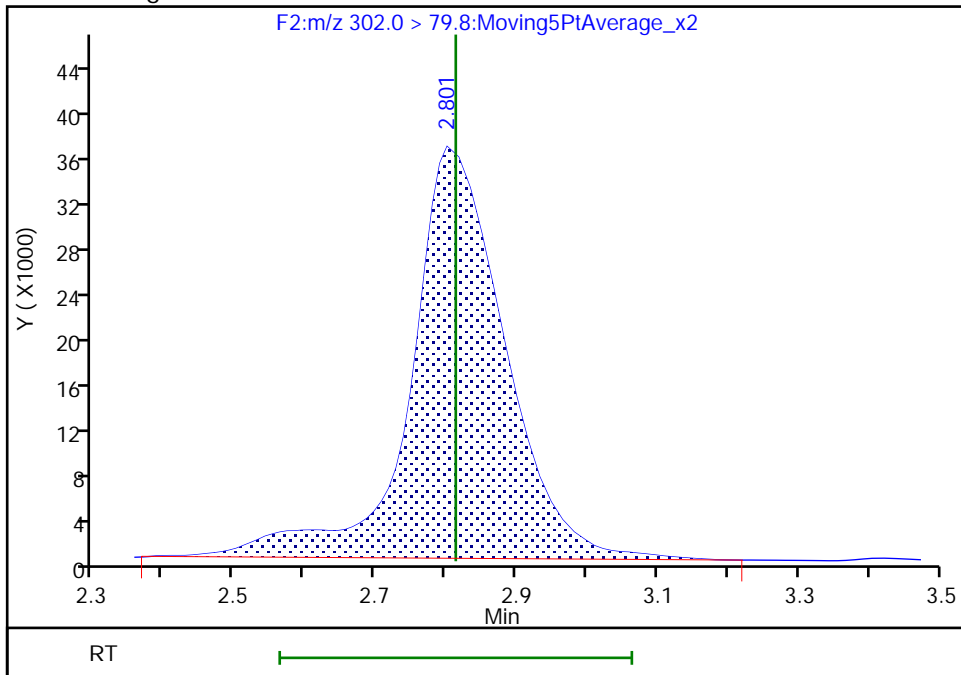
RT: 2.80
Area: 322189
Amount: 42.803660
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 338617
Amount: 41.307297
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 14:59:39
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

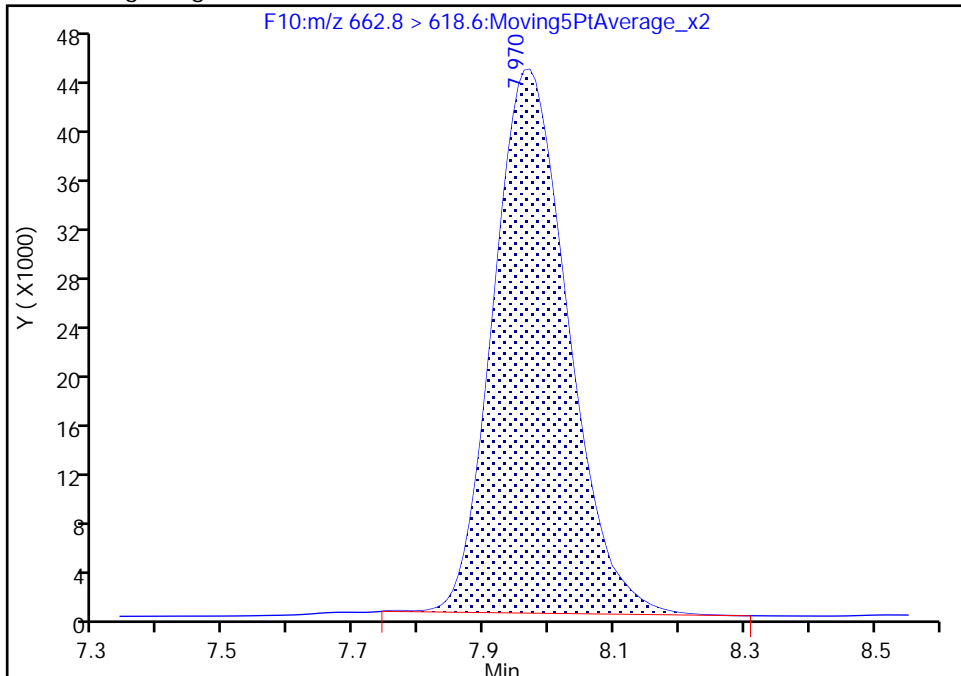
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Injection Date: 17-Oct-2018 14:07:54 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

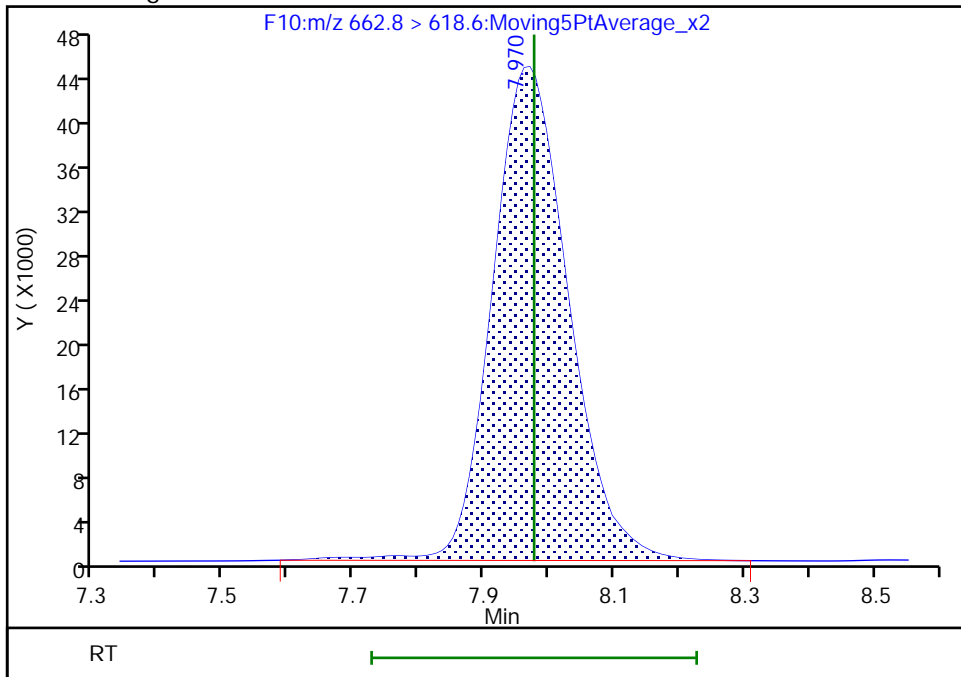
RT: 7.97
Area: 356573
Amount: 9.661576
Amount Units: ng/ml

Processing Integration Results



RT: 7.97
Area: 363751
Amount: 9.945776
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 15:00:43
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

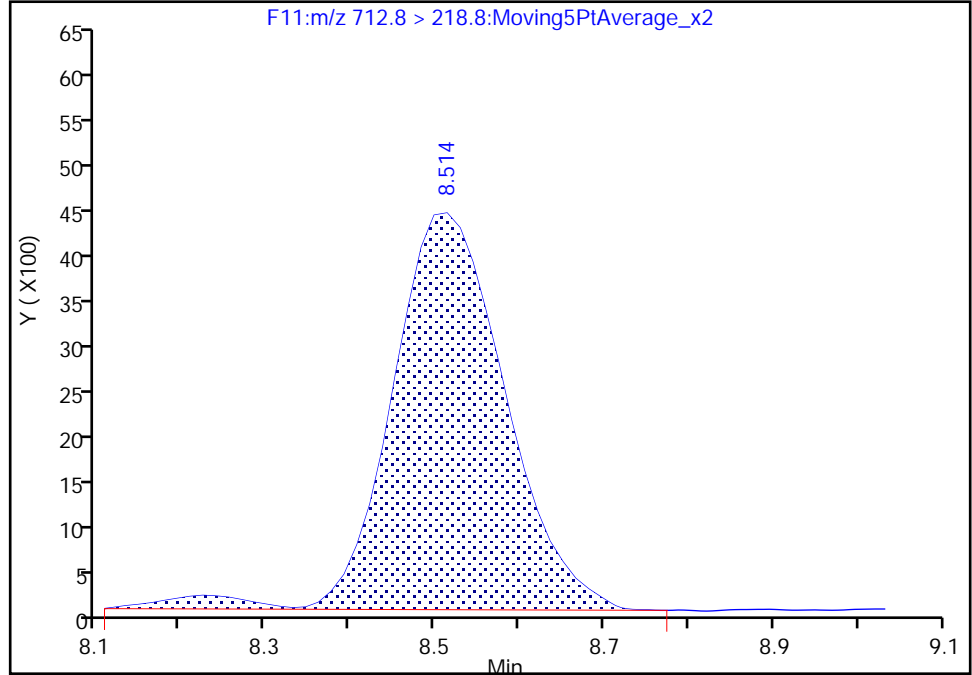
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Injection Date: 17-Oct-2018 14:07:54 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

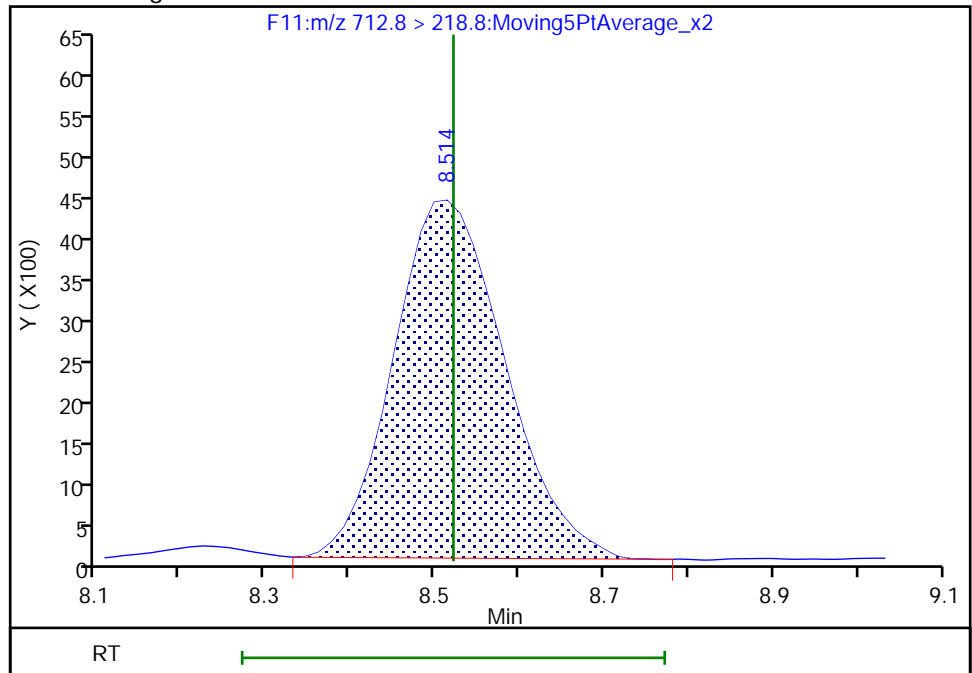
RT: 8.51
Area: 40949
Amount: 9.662693
Amount Units: ng/ml

Processing Integration Results



RT: 8.51
Area: 39667
Amount: 9.943124
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 15:04:16
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A10.d
 Lims ID: ICIS
 Client ID:
 Sample Type: ICIS Calib Level: 5
 Inject. Date: 17-Oct-2018 14:23:52 ALS Bottle#: 0 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-010 IC 5
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:27 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 16:05:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.334	2.336	-0.002	1.000	645885	47.9	95.9	385	
2 Perfluorobutanoic acid	212.9 > 168.9	2.343	2.337	0.006	1.004	220914	20.0	100.0	226	
D 3 13C5 PFPeA	267.7 > 222.6	2.750	2.754	-0.004	1.000	411808	48.2	96.4	303	
4 Perfluoropentanoic acid	262.9 > 218.8	2.760	2.754	0.006	1.004	467563	19.9	99.7	2838	
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.814	0.004	1.000	344027	48.8	105	378	M
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.818	2.820	-0.002	1.000	241309	18.7	93.5	398	
D 7 13C2 PFHxA	314.8 > 269.6	3.164	3.172	-0.008	1.000	755922	49.1	98.3	934	
8 Perfluorohexanoic acid	312.8 > 268.6	3.177	3.174	0.003	1.004	316464	20.2	101	1564	
D 9 13C4 PFHpA	366.9 > 321.8	3.703	3.702	0.001	1.000	1446406	51.3	103	1070	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.703	3.705	-0.002	1.000	557789	19.7	98.6	969	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	383361	47.0	99.4	165	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.749	-0.001	1.000	249693	20.0	100	581	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.325	0.005	1.000	115369	45.9	96.6	741	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.330	0.0	1.000	48954	20.4	102	630	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	1092624	50.8		102	2013	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1146400	50.0			3471	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	426187	19.7		98.5	1201	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.411	4.412	-0.001	0.854	130750	18.5		92.3	477	
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1468139	50.6		101	1064	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	589760	18.3		91.4	2693	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.168	5.160	0.008	1.000	154040	20.1		100	2184	
D 22 13C4 PFOS										
502.8 > 79.8	5.168	5.161	0.007	1.000	354522	49.1		103	556	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.902	5.891	0.011	1.000	328510	48.2		101	1558	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.902	5.896	0.006	1.000	99493	18.0		89.9	826	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1559492	52.1		104	1277	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.923	0.003	1.000	586742	18.6		93.2	2286	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	368677	48.2		96.5	930	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.295	6.283	0.012	1.003	158990	19.9		99.3	199	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	323668	49.9		99.8	1129	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	128045	20.5		103	1778	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.670	0.0	1.291	149455	19.3		96.3	1260	
D 32 13C2 PFUnA										
564.8 > 519.8	6.688	6.682	0.006	1.000	1587674	51.0		102	17636	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.683	0.005	1.000	629524	19.3		96.6	1014	
D 35 13C8 FOSA										
505.8 > 77.8	6.958	6.955	0.003	1.000	702765	50.6		101	3239	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.958	6.959	-0.001	1.000	241945	20.3		102	1750	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.361	7.359	0.002	1.000	660163	19.5		97.6	1359	
D 37 13C2 PFDaA										
614.8 > 569.6	7.361	7.362	-0.001	1.000	1969434	50.0		100.0	7062	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.979	7.976	0.003	0.937	403824	20.1		100	2472	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1768278	48.9		97.8	1232	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.521	-0.007	1.000	660889	19.2		95.9	2276	
712.8 > 168.8	8.529	8.521	0.008	1.002	139463		4.74(0.00-0.00)	95.9	477	
712.8 > 218.8	8.514	8.521	-0.007	1.000	81707		8.09(0.00-0.00)	95.9	275	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L4_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A10.d

Injection Date: 17-Oct-2018 14:23:52

Instrument ID: LC410

Lims ID: ICIS

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

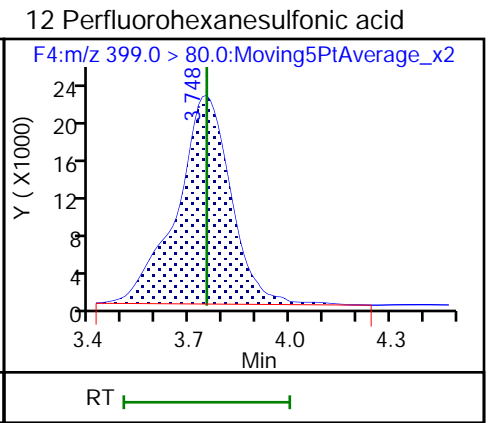
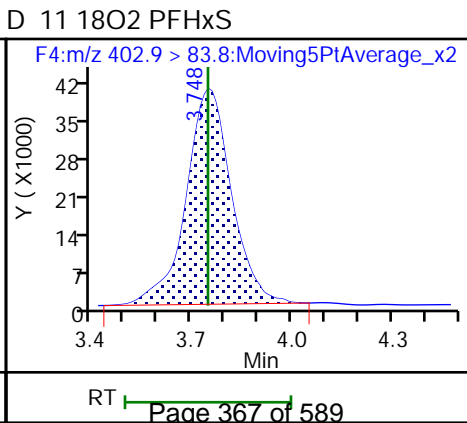
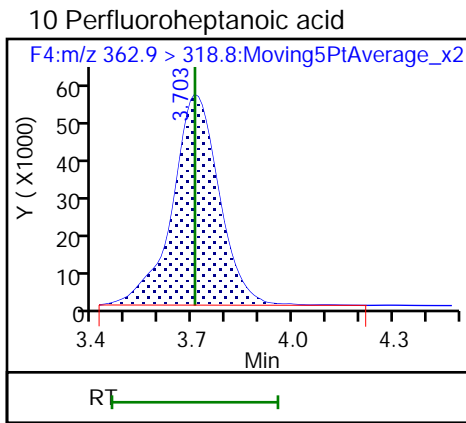
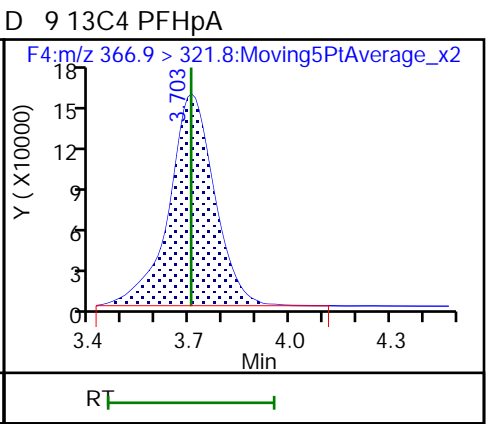
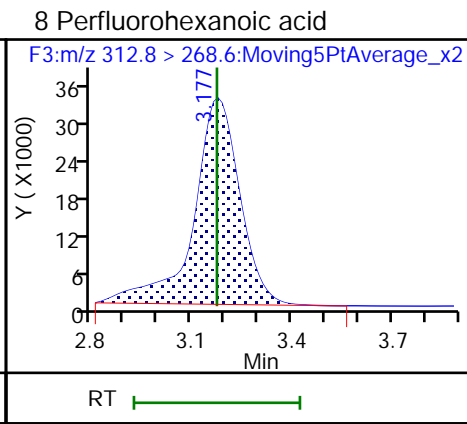
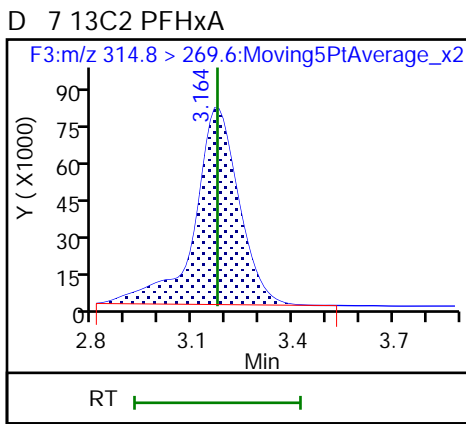
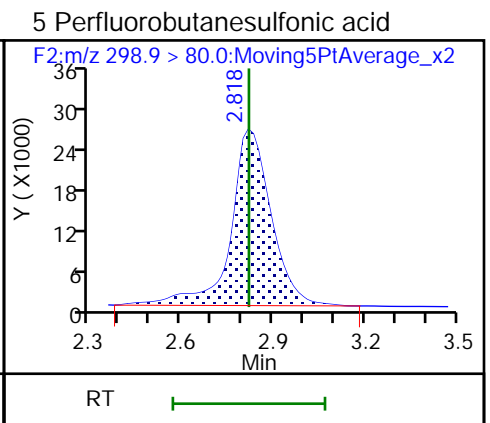
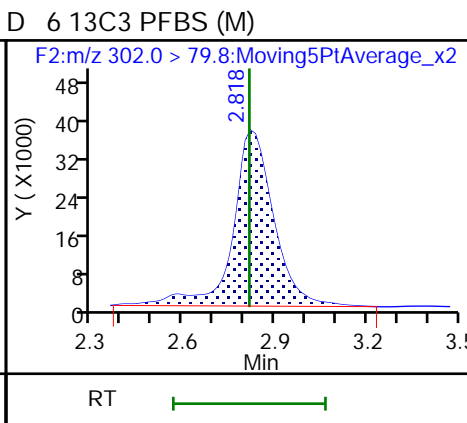
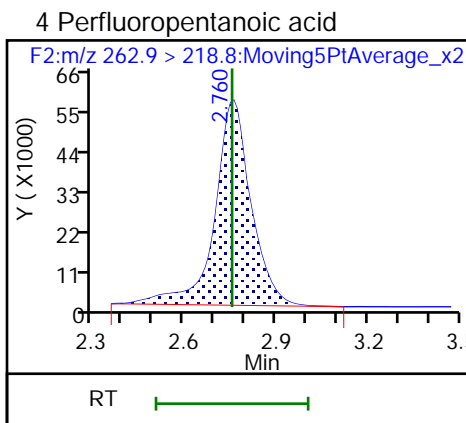
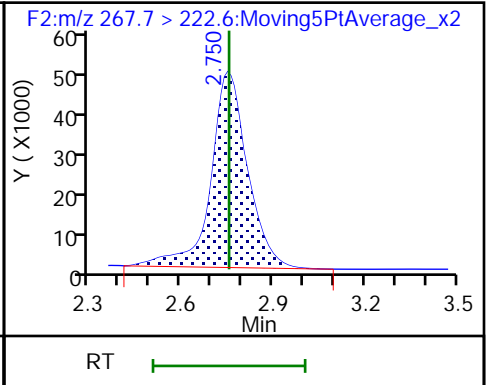
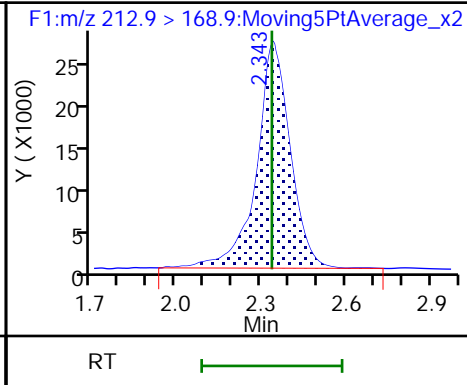
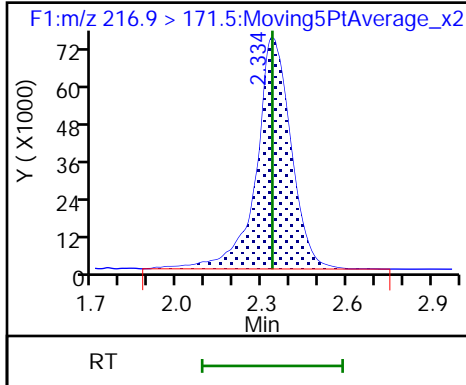
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

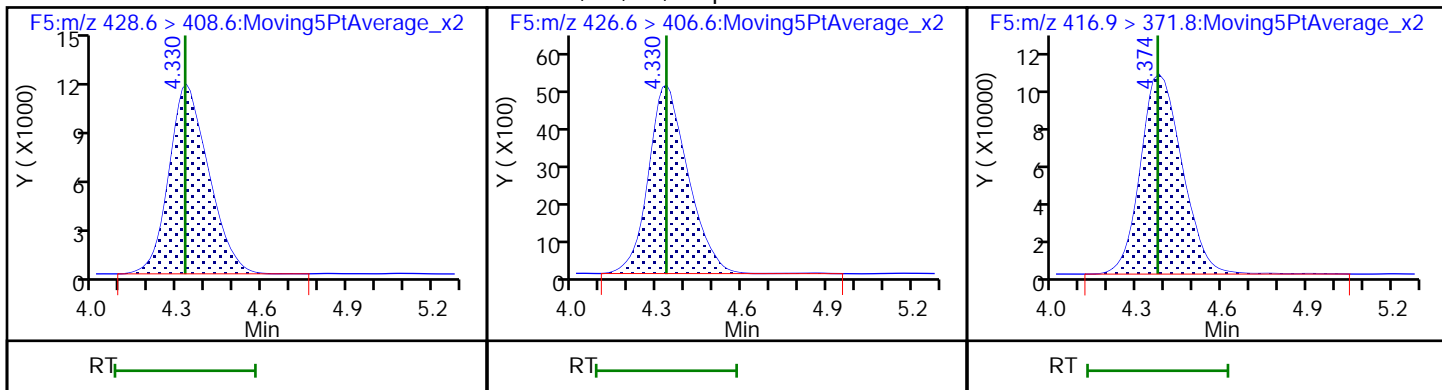
2 Perfluorobutanoic acid

D 3 13C5 PFPeA



D 13 M2-6:2 FTS

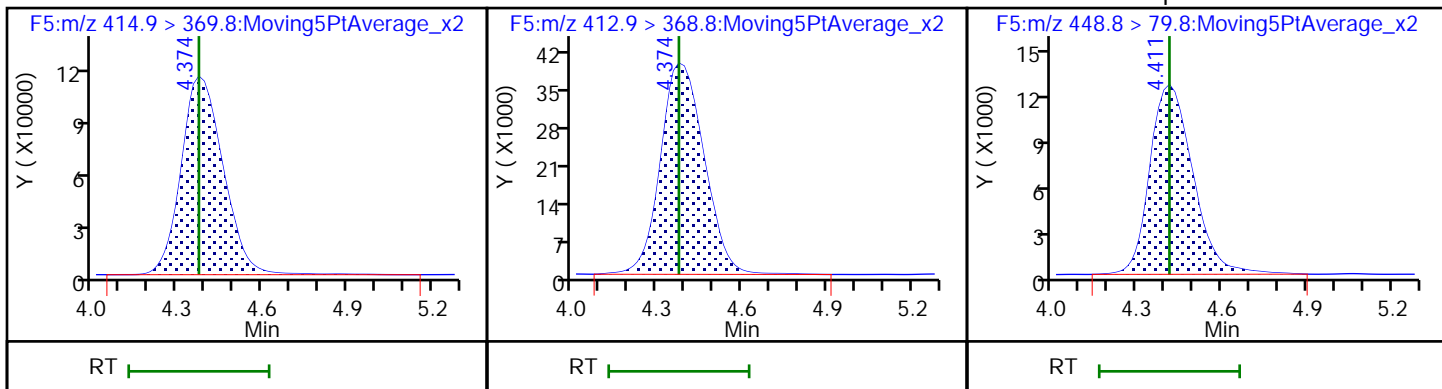
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



* 15 13C2 PFOA

16 Perfluorooctanoic acid

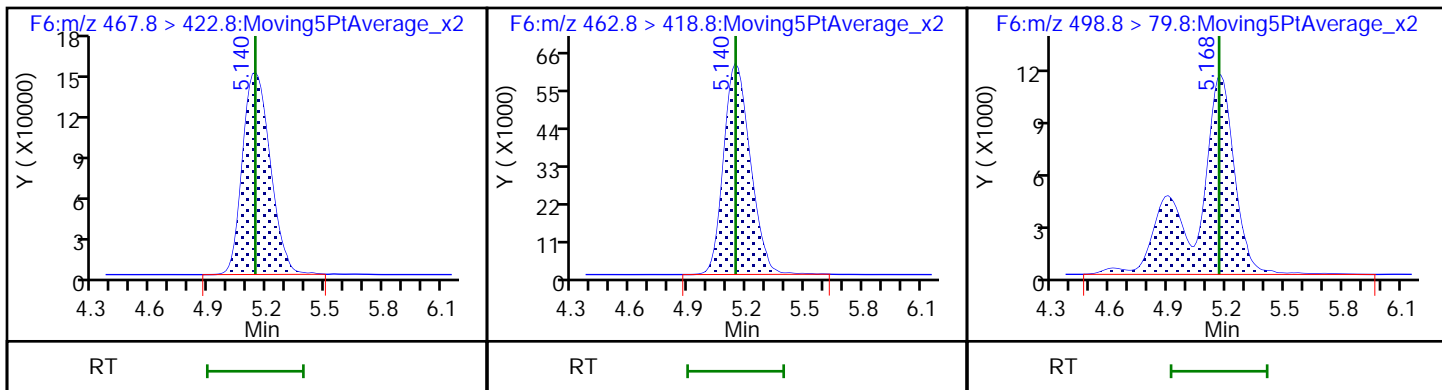
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

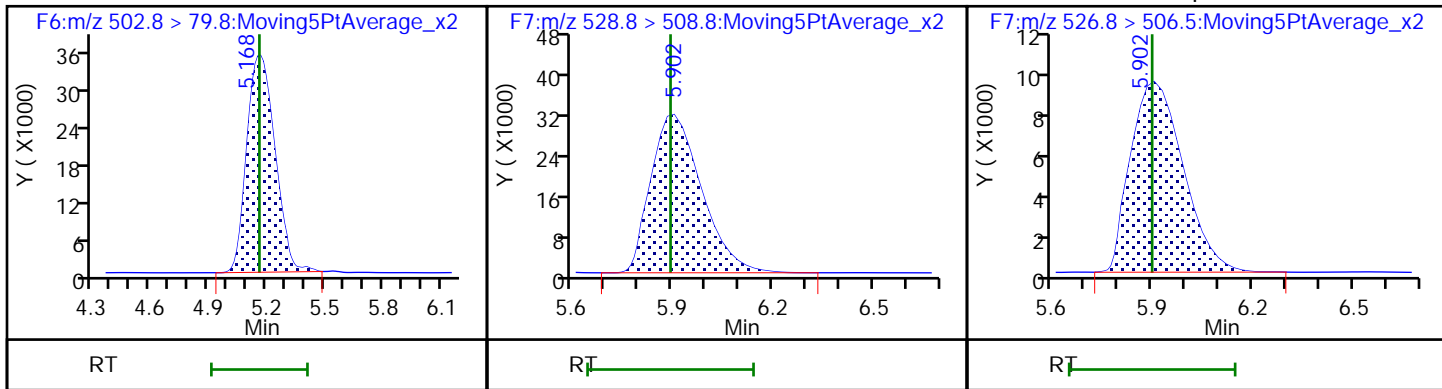
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

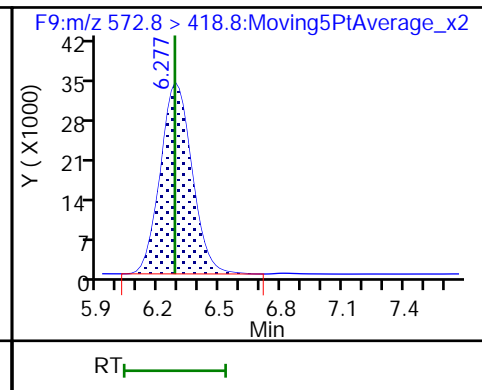
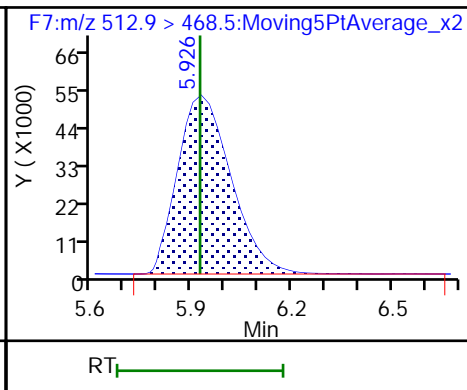
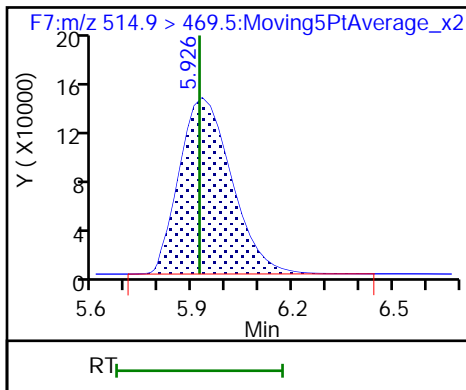
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

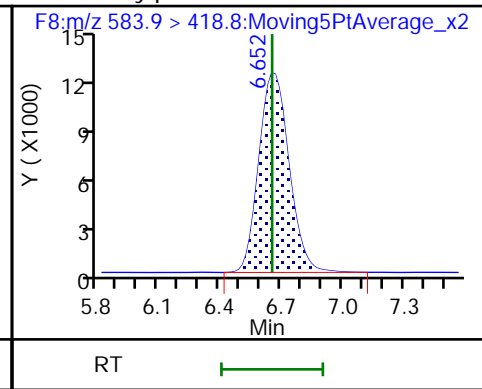
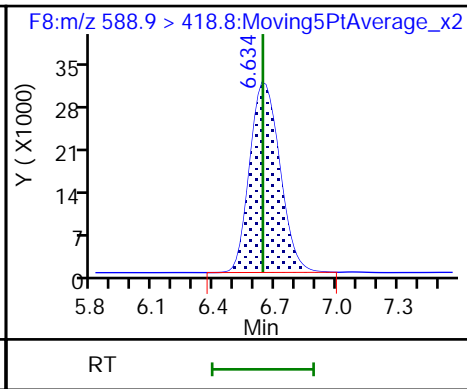
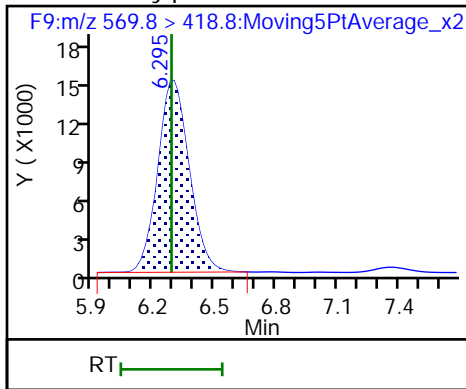
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

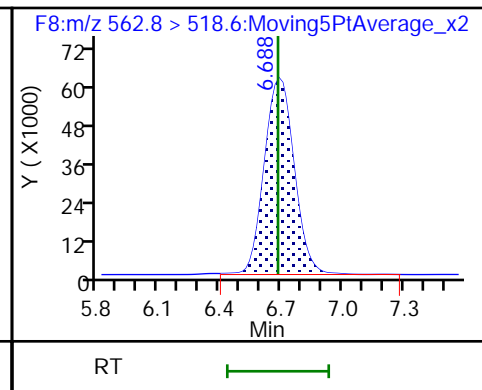
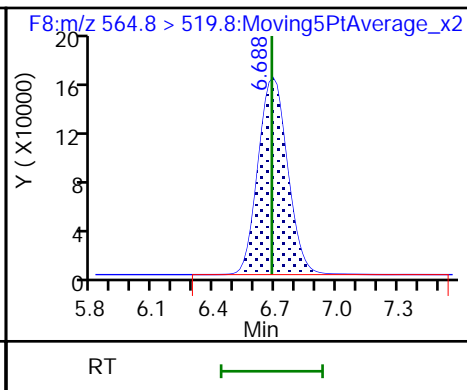
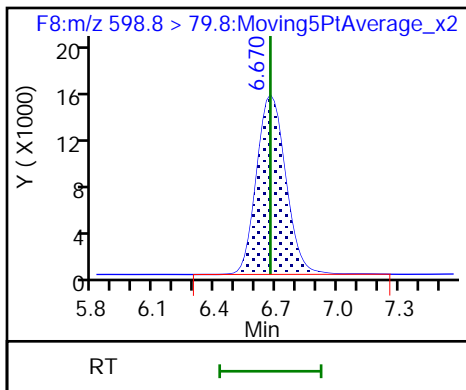
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

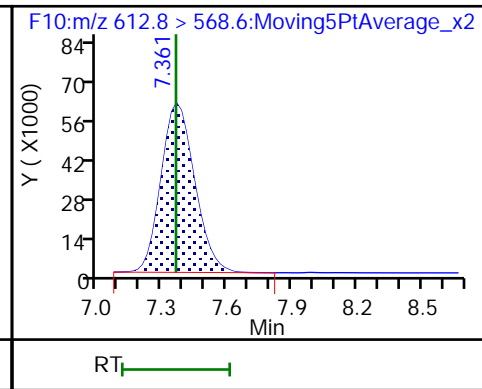
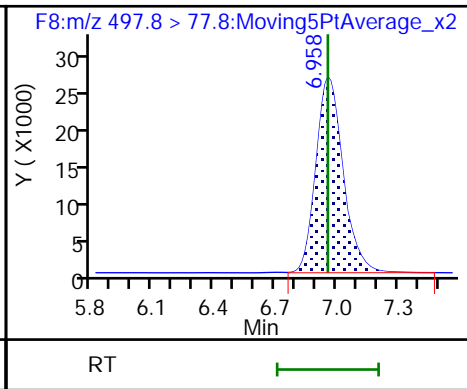
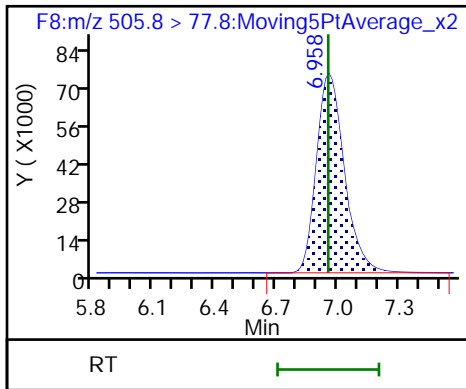
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

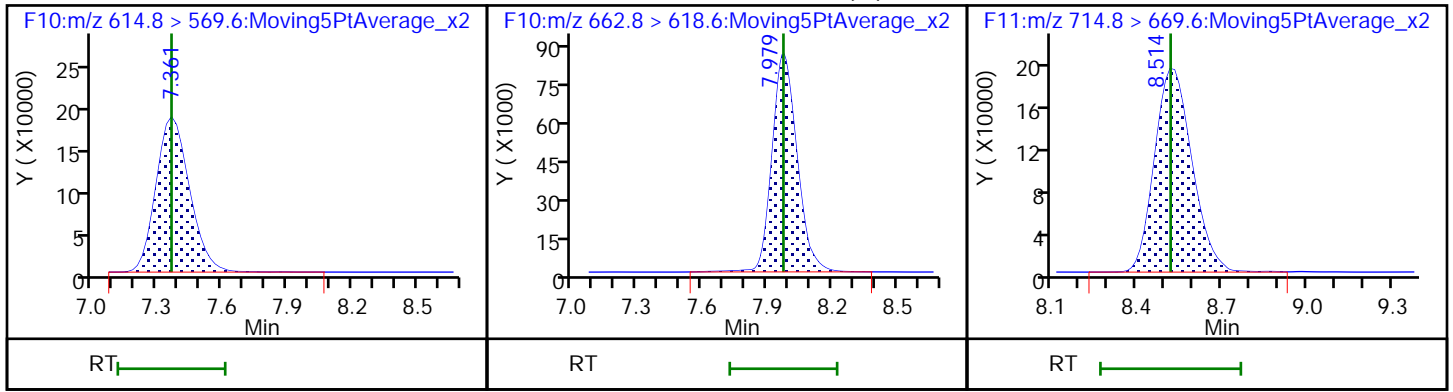
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid (M)

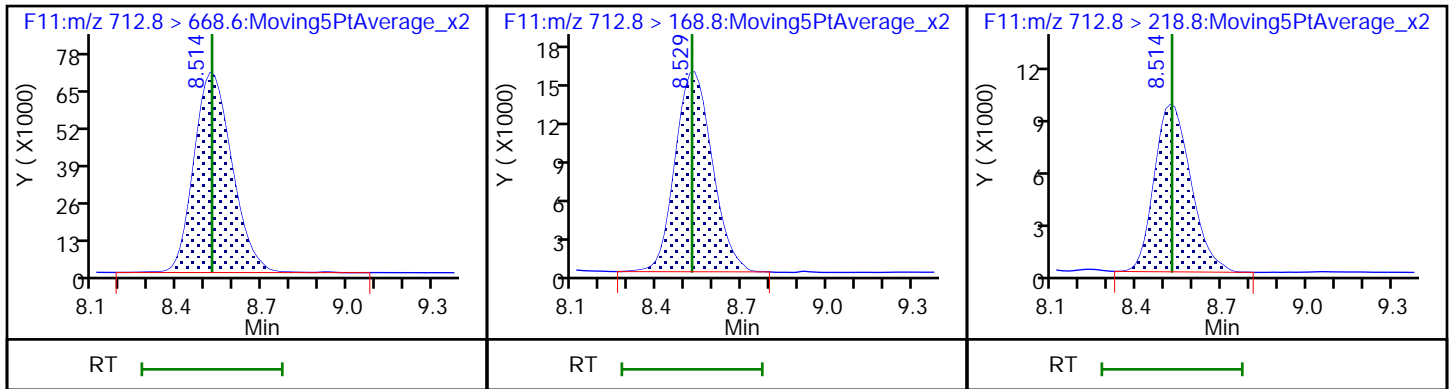
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid



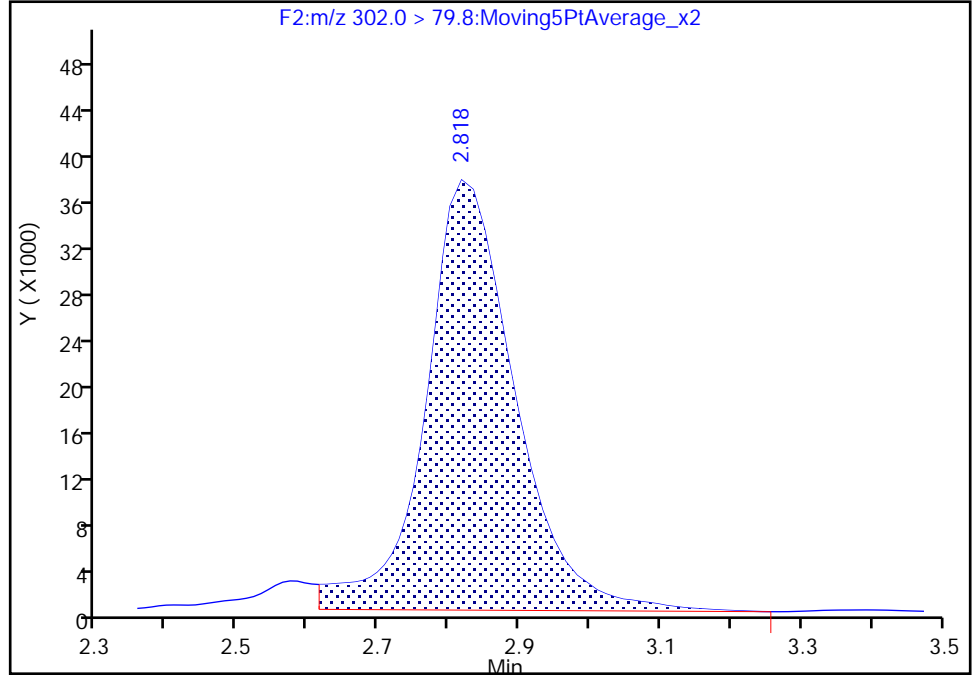
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A10.d
Injection Date: 17-Oct-2018 14:23:52 Instrument ID: LC410
Lims ID: ICIS
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 6 13C3 PFBS, CAS: STL02337
Signal: 1

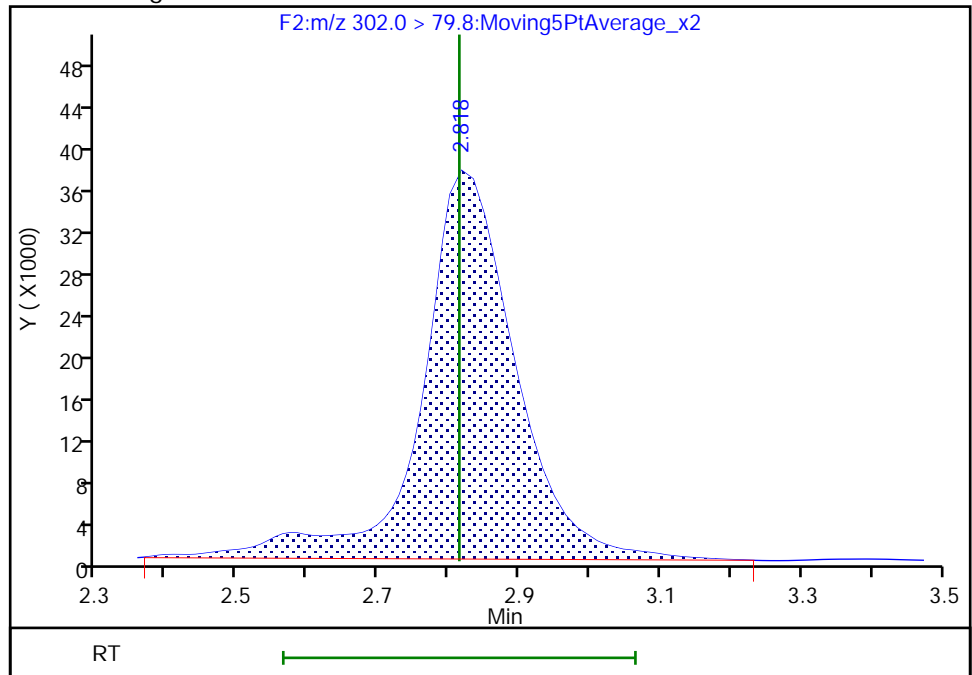
RT: 2.82
Area: 329077
Amount: 47.178168
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 344027
Amount: 48.802308
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:05:29
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 371 of 589

TestAmerica Burlington

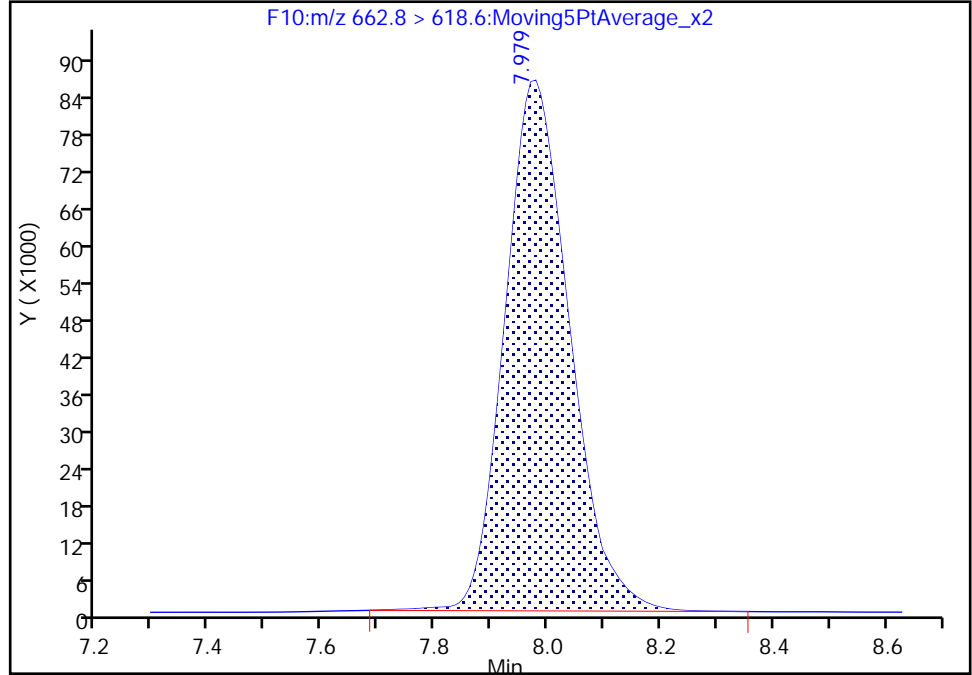
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A10.d
Injection Date: 17-Oct-2018 14:23:52 Instrument ID: LC410
Lims ID: ICIS
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:M/RM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

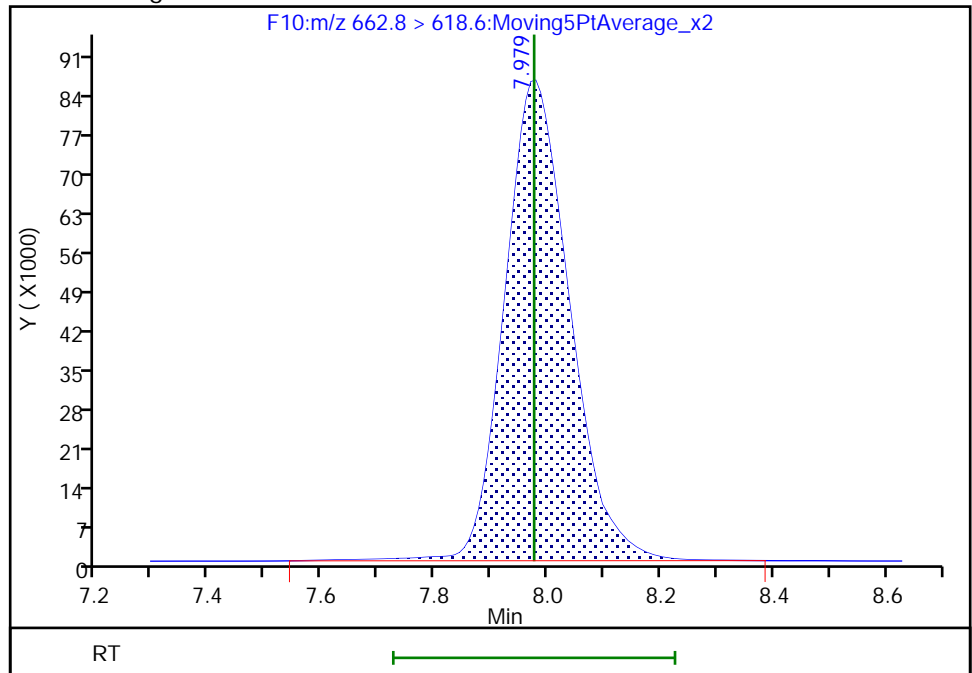
RT: 7.98
Area: 687104
Amount: 19.885018
Amount Units: ng/ml

Processing Integration Results



RT: 7.98
Area: 693824
Amount: 20.070730
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A11.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 17-Oct-2018 14:39:50 ALS Bottle#: 0 Worklist Smp#: 11
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-011 IC 6
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:29 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 16:07:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.338	2.336	0.002	1.000	637703	52.7	105	707	
2 Perfluorobutanoic acid	212.9 > 168.9	2.343	2.338	0.005	1.002	317597	29.2	97.3	341	
D 3 13C5 PFPeA	267.7 > 222.6	2.750	2.754	-0.004	1.000	409798	53.4	107	4889	
4 Perfluoropentanoic acid	262.9 > 218.8	2.760	2.754	0.006	1.004	662266	28.4	94.6	1254	
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.815	0.003	1.000	305671	48.2	104	534	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.834	2.820	0.014	1.006	341905	29.8	99.4	464	
D 7 13C2 PFHxA	314.8 > 269.6	3.177	3.172	0.005	1.000	749159	54.2	108	9759	
8 Perfluorohexanoic acid	312.8 > 268.6	3.177	3.174	0.003	1.000	456836	29.4	98.0	4462	
D 9 13C4 PFHpA	366.9 > 321.8	3.715	3.702	0.013	1.000	1314020	51.9	104	1195	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.703	3.705	-0.002	0.997	745215	29.0	96.7	1094	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	344516	47.0	99.4	272	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.749	-0.001	1.000	342568	30.7	102	1110	
D 13 M2-6:2 FTS	428.6 > 408.6	4.317	4.325	-0.008	1.000	111438	49.3	104	925	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.330	0.0	1.003	66032	28.6	95.3	1025	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	996848	51.6		103	3736	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1030333	50.0			5136	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	575433	29.2		97.2	896	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.411	4.412	-0.001	0.854	194023	29.6		98.8	618	M
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1371470	52.6		105	2582	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	789377	26.2		87.3	1237	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.168	5.160	0.008	1.000	209502	29.6		98.5	332	M
D 22 13C4 PFOS										
502.8 > 79.8	5.168	5.161	0.007	1.000	327712	50.5		106	636	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.891	-0.009	1.000	283037	46.2		96.5	838	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.882	5.896	-0.014	1.000	154728	32.5		108	402	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1346103	50.1		100	815	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.923	0.003	1.000	828327	30.5		102	1108	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	329801	48.0		96.0	1481	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.000	223351	31.2		104	340	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	295427	50.7		101	2068	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	172294	30.3		101	1367	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.670	0.0	1.291	217089	30.3		101	4445	M
D 32 13C2 PFUnA										
564.8 > 519.8	6.688	6.682	0.006	1.000	1461436	52.2		104	6169	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.683	0.005	1.000	888797	29.6		98.8	1808	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	660912	52.9		106	7229	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.959	6.959	0.0	1.000	323592	28.9		96.4	1842	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	905170	29.7		99.1	2020	
D 37 13C2 PFDaA										
614.8 > 569.6	7.362	7.362	0.0	1.000	1773342	50.1		100	2499	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.979	7.977	0.002	0.937	260674	30.1		100	3032	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1630900	50.2		100	1277	
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.514	8.521	-0.007	1.000	933224	29.4		97.8	1084	
712.8 > 168.8	8.514	8.521	-0.007	1.000	195712		4.77(0.00-0.00)	97.8	341	
712.8 > 218.8	8.514	8.521	-0.007	1.000	108828		8.58(0.00-0.00)	97.8	223	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L4A_00001

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A11.d

Injection Date: 17-Oct-2018 14:39:50

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

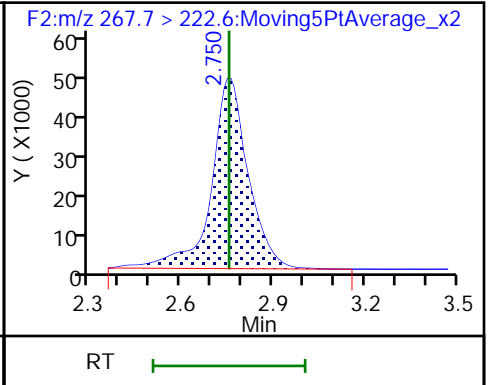
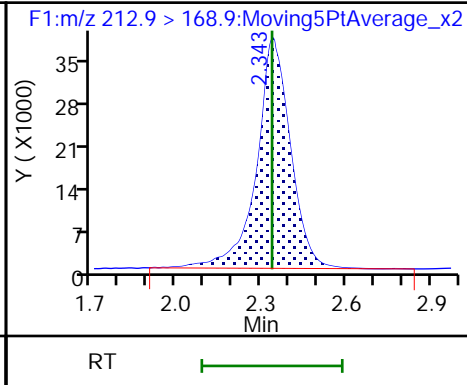
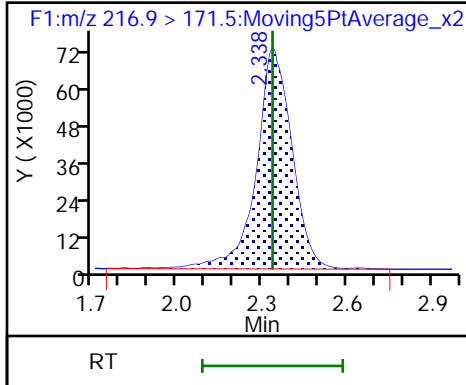
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

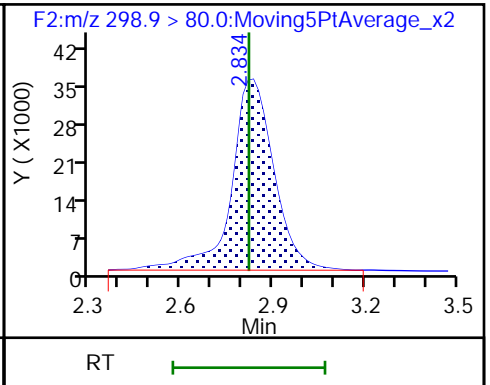
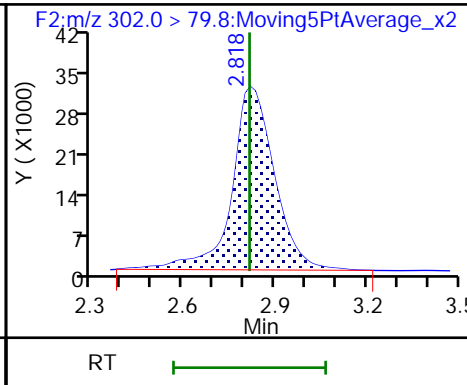
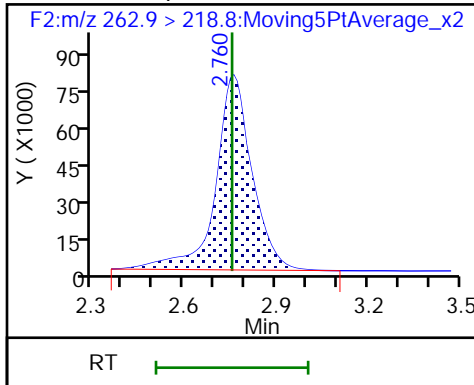
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 6 13C3 PFBS

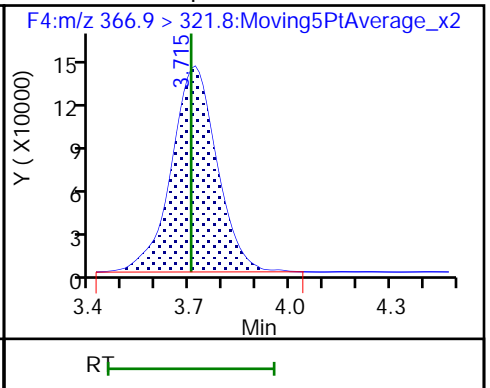
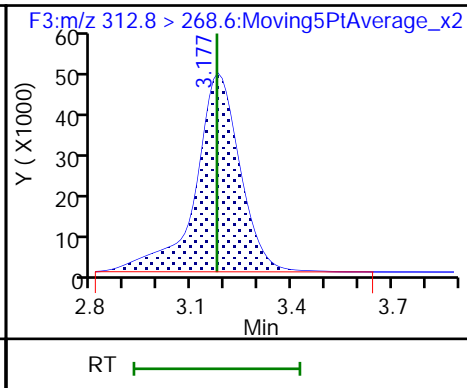
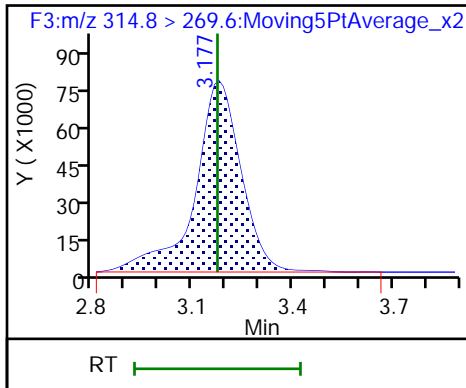
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

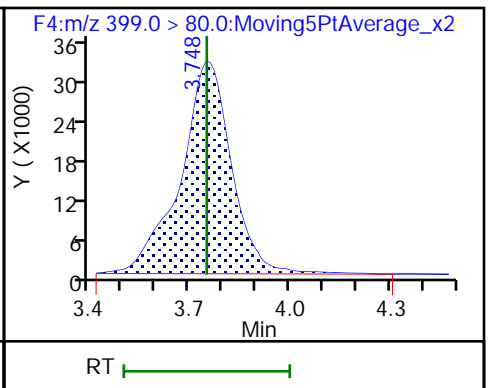
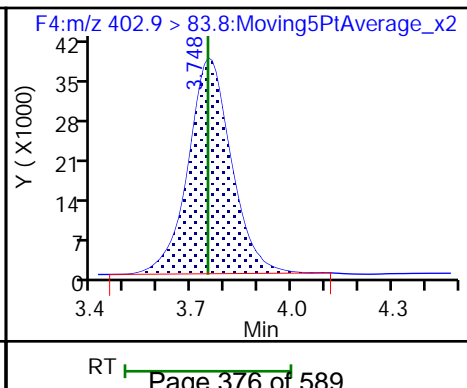
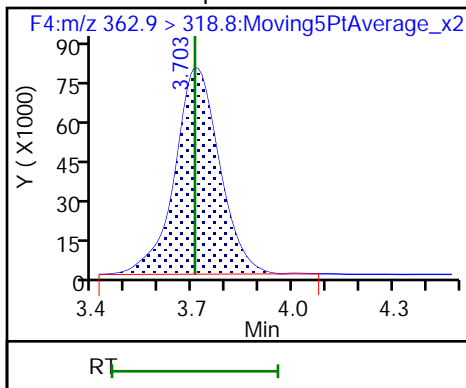
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

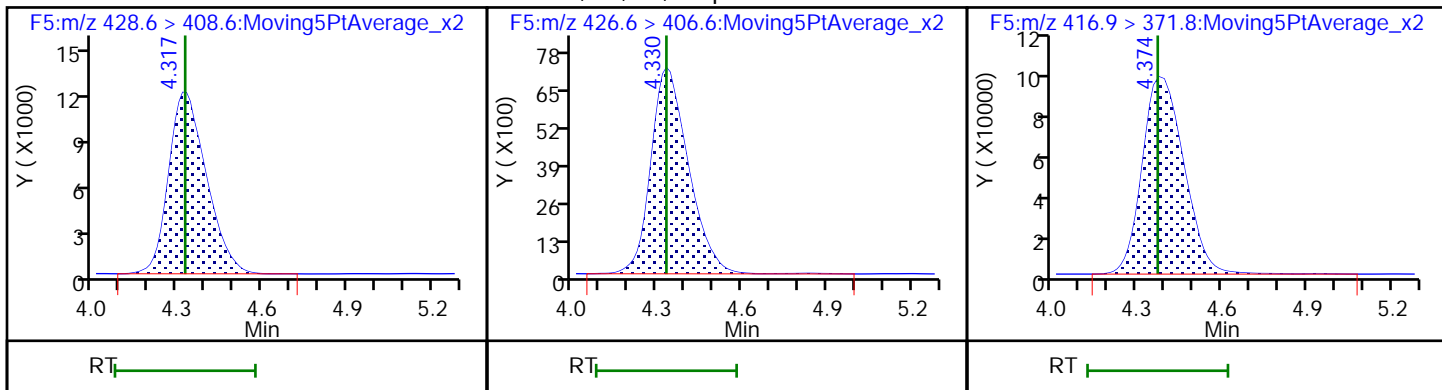
D 11 18O2 PFHxS

12 Perfluorohexanesulfonic acid



D 13 M2-6:2 FTS

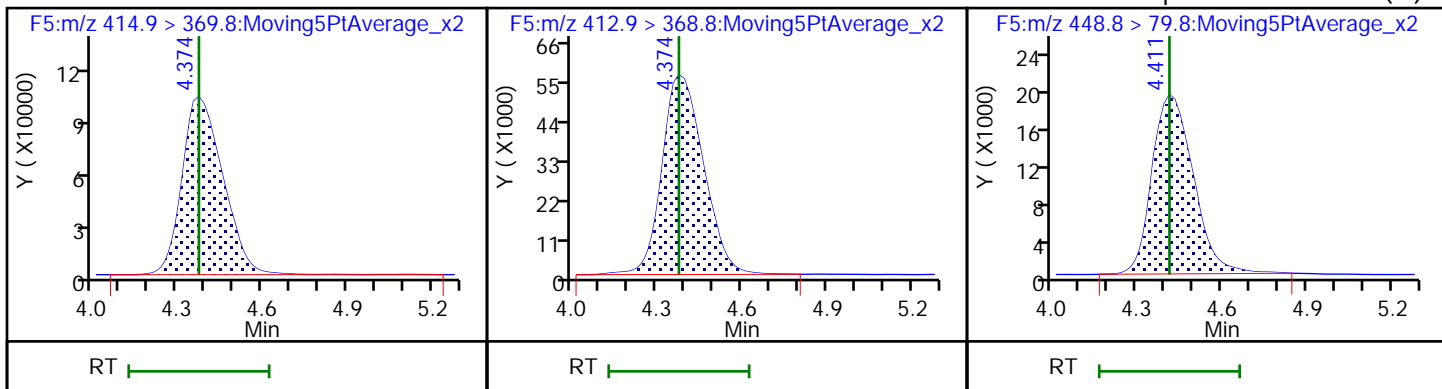
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



* 15 13C2 PFOA

16 Perfluorooctanoic acid

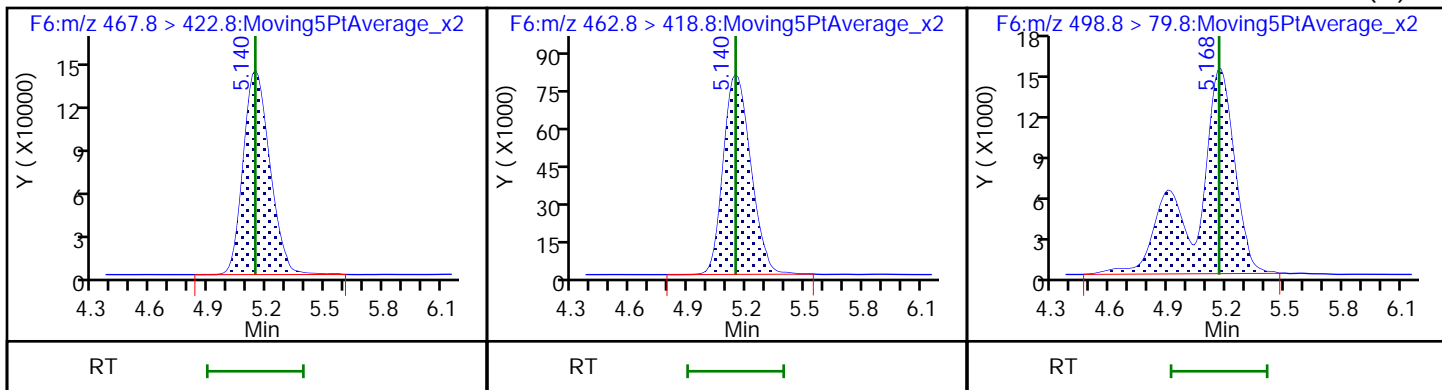
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid

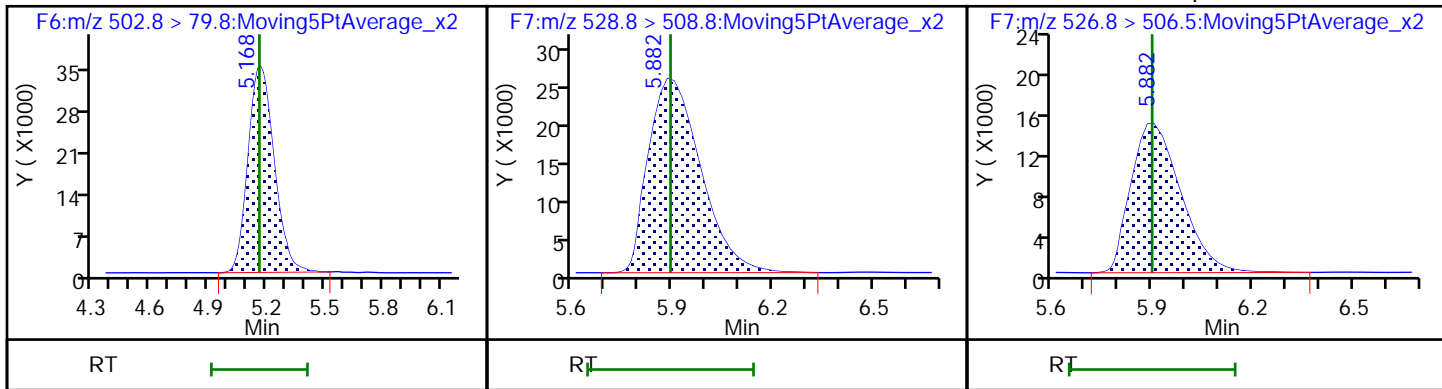
21 Perfluorooctanesulfonic acid (M)



D 22 13C4 PFOS

D 24 M2-8:2 FTS

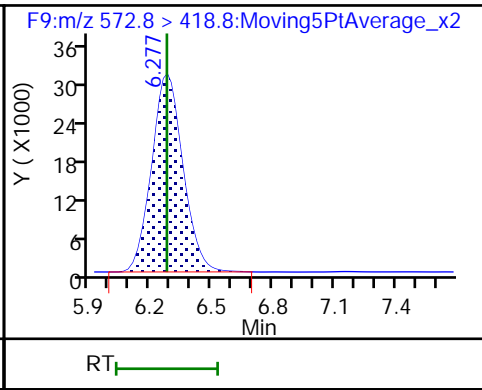
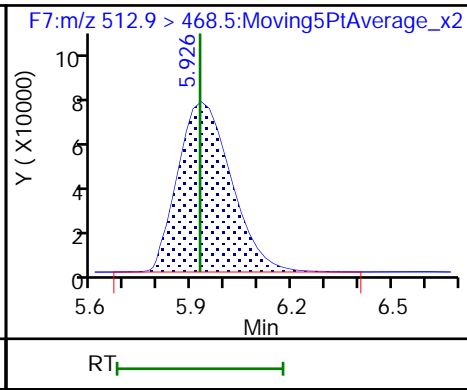
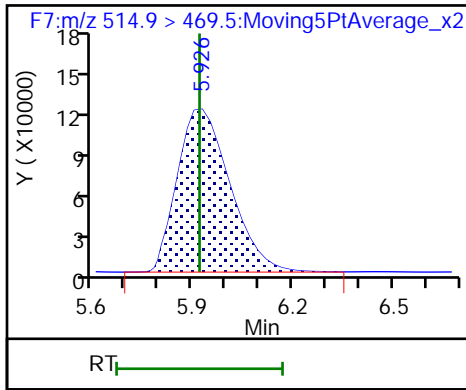
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

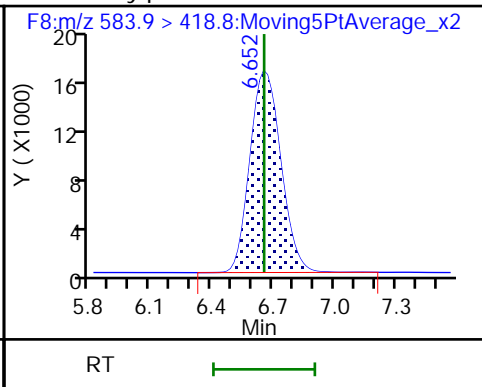
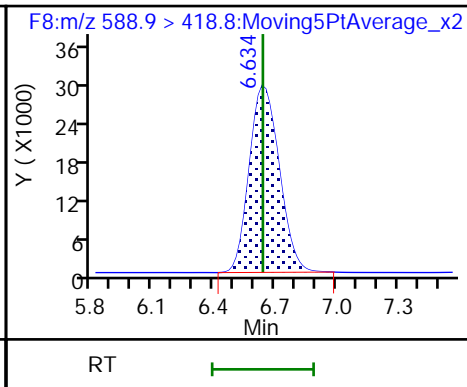
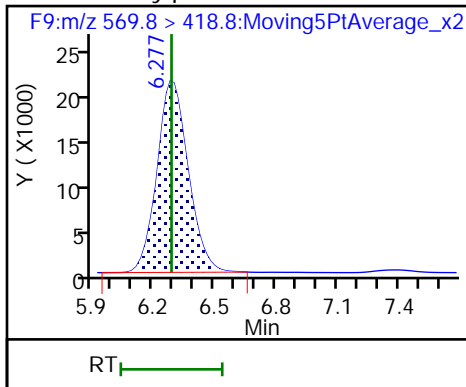
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

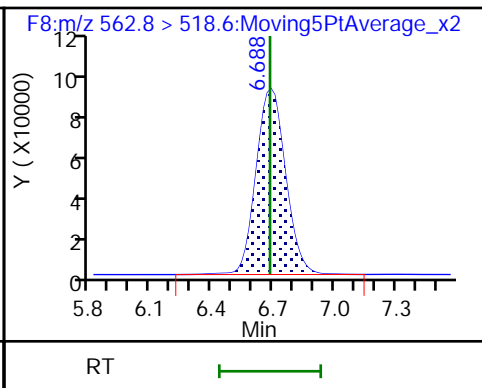
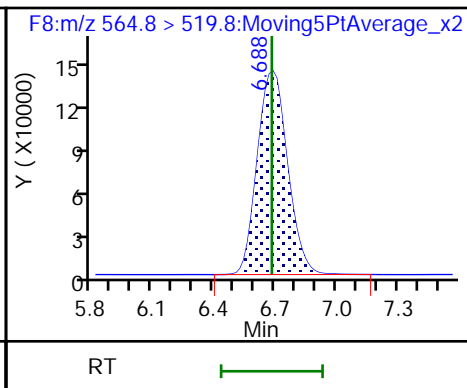
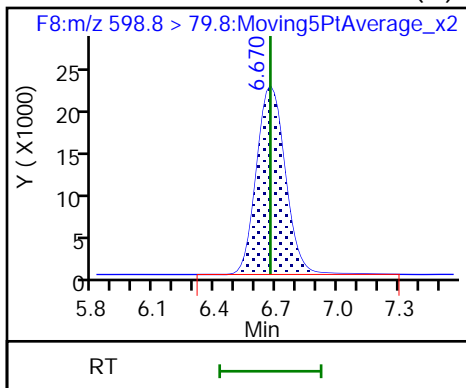
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid (M)

D 32 13C2 PFUnA

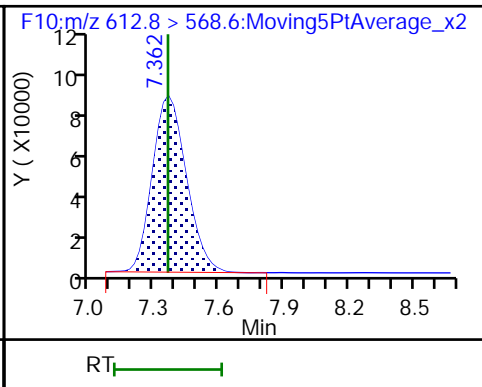
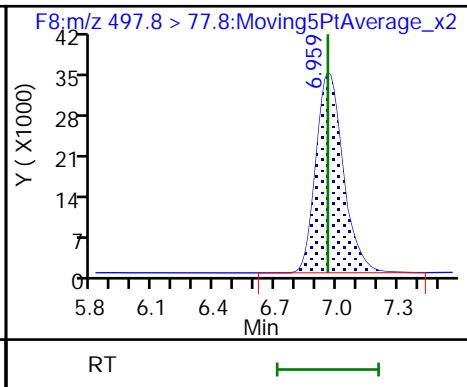
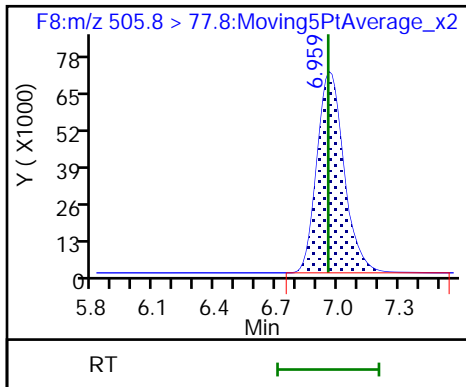
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

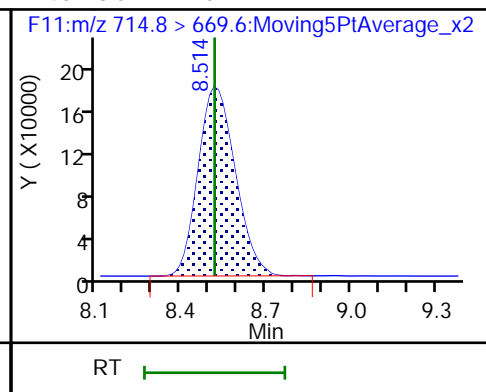
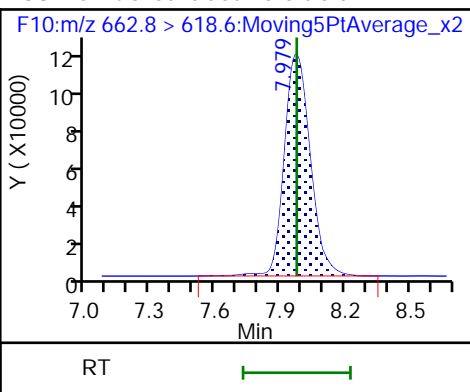
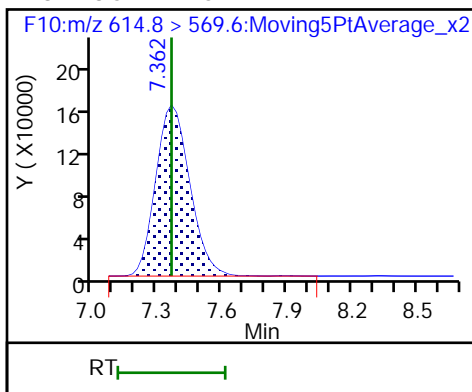
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid

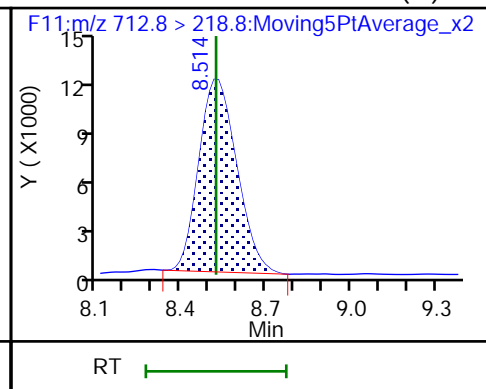
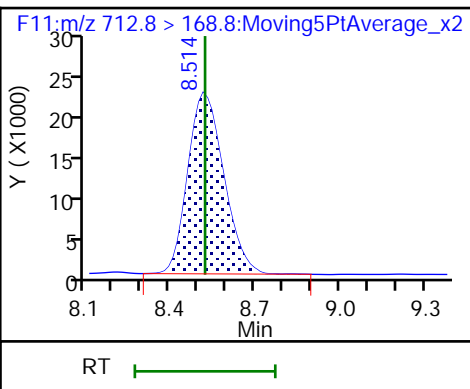
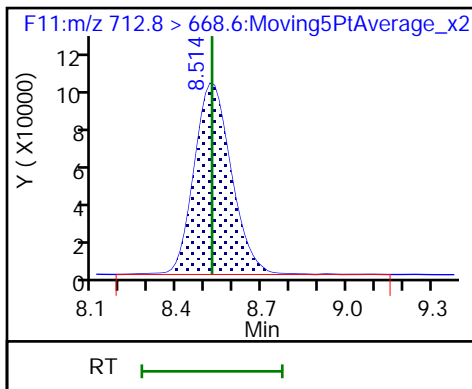
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid (M)



TestAmerica Burlington

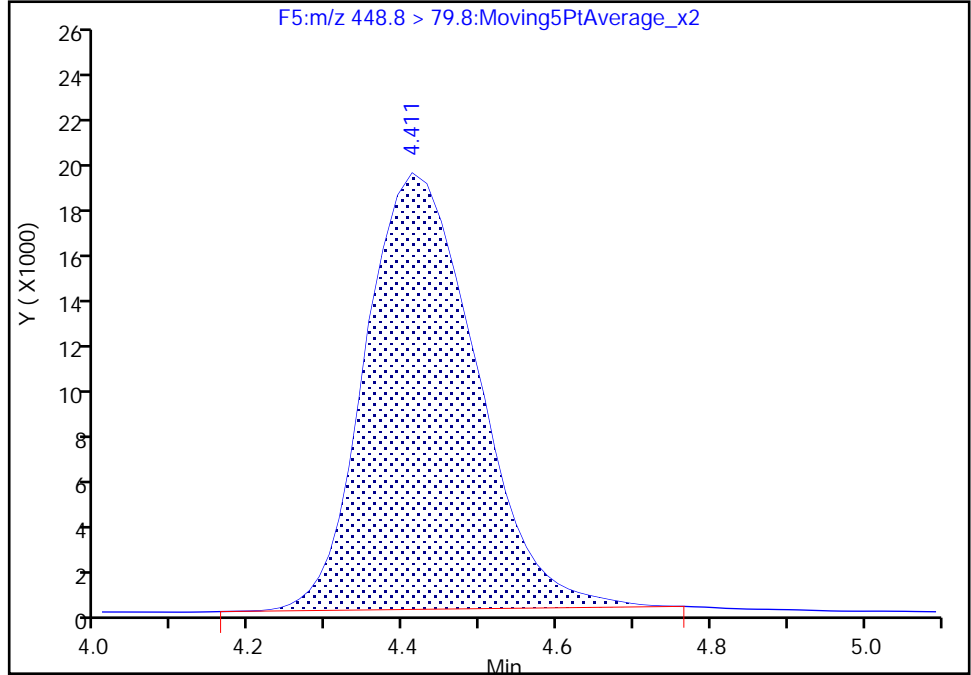
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A11.d
Injection Date: 17-Oct-2018 14:39:50 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

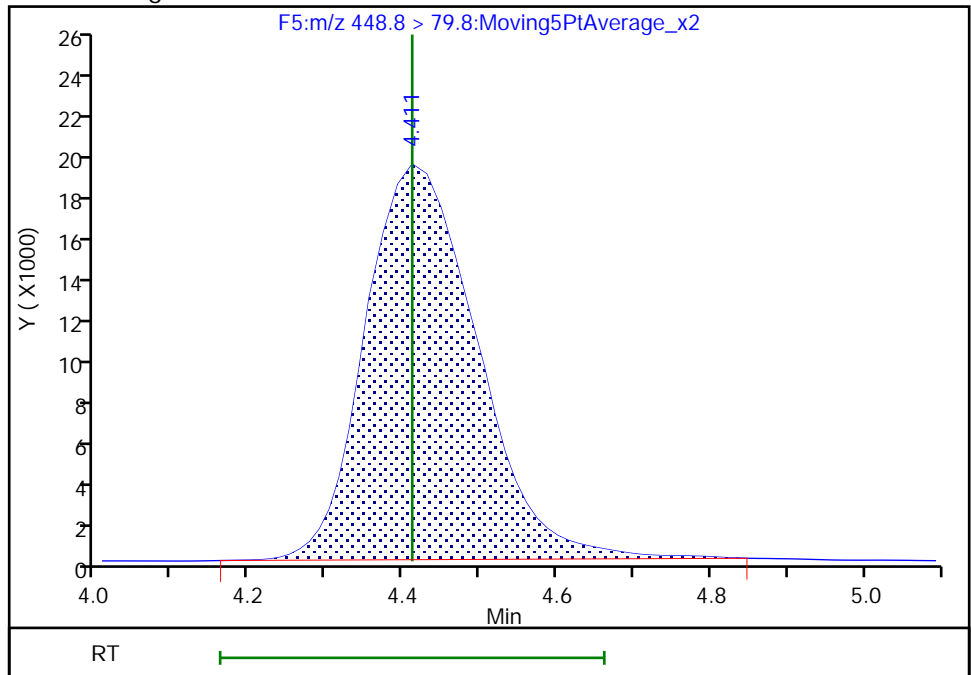
RT: 4.41
Area: 191328
Amount: 29.338930
Amount Units: ng/ml

Processing Integration Results



RT: 4.41
Area: 194023
Amount: 29.642697
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

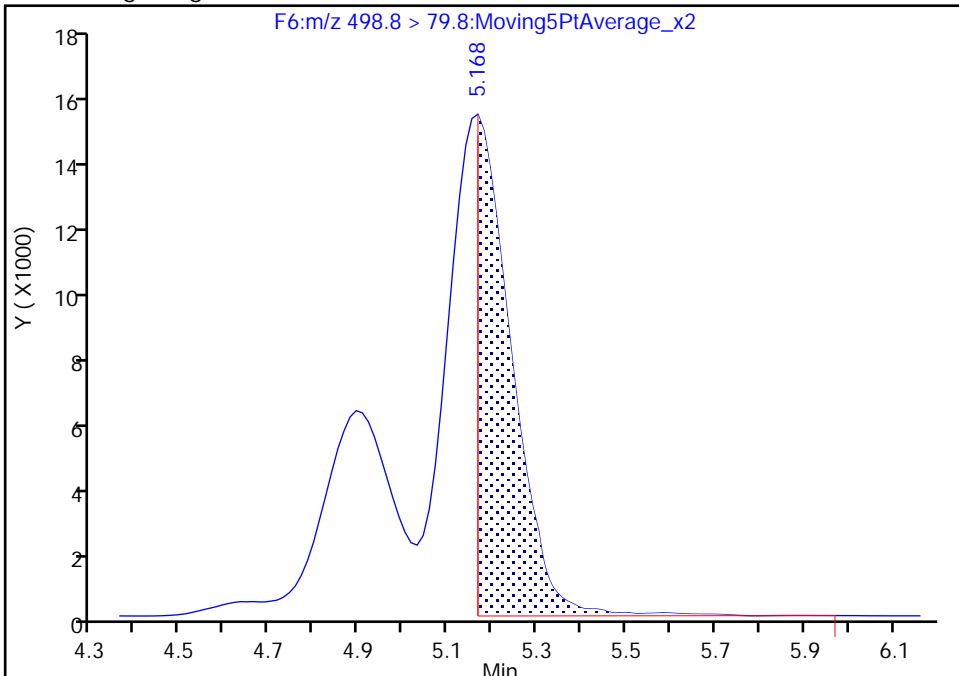
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Injection Date: 17-Oct-2018 14:39:50 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

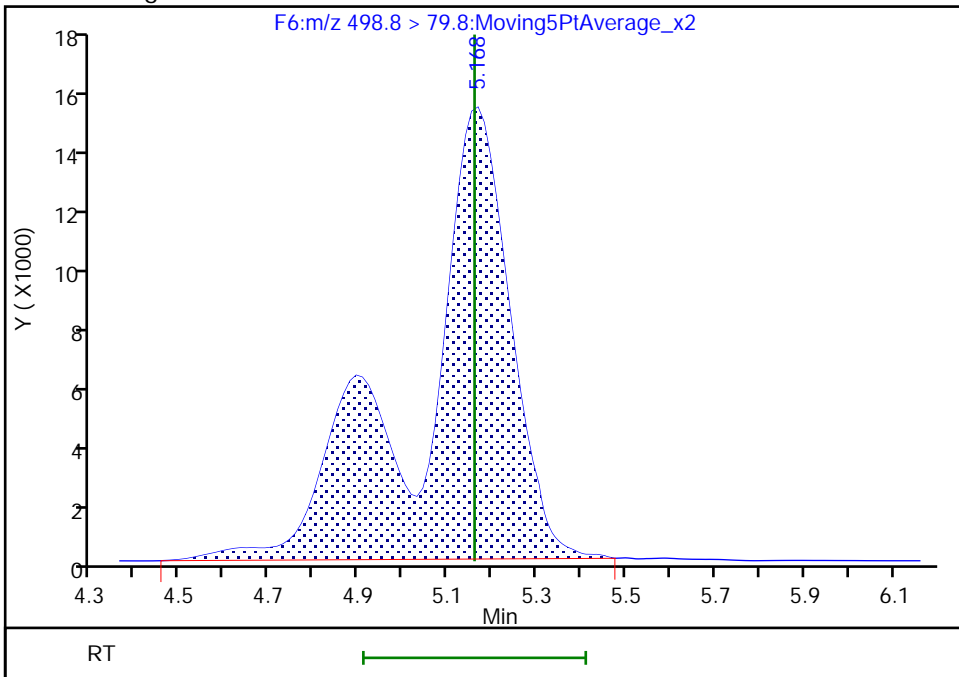
RT: 5.17
Area: 76953
Amount: 11.666659
Amount Units: ng/ml

Processing Integration Results



RT: 5.17
Area: 209502
Amount: 29.561877
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

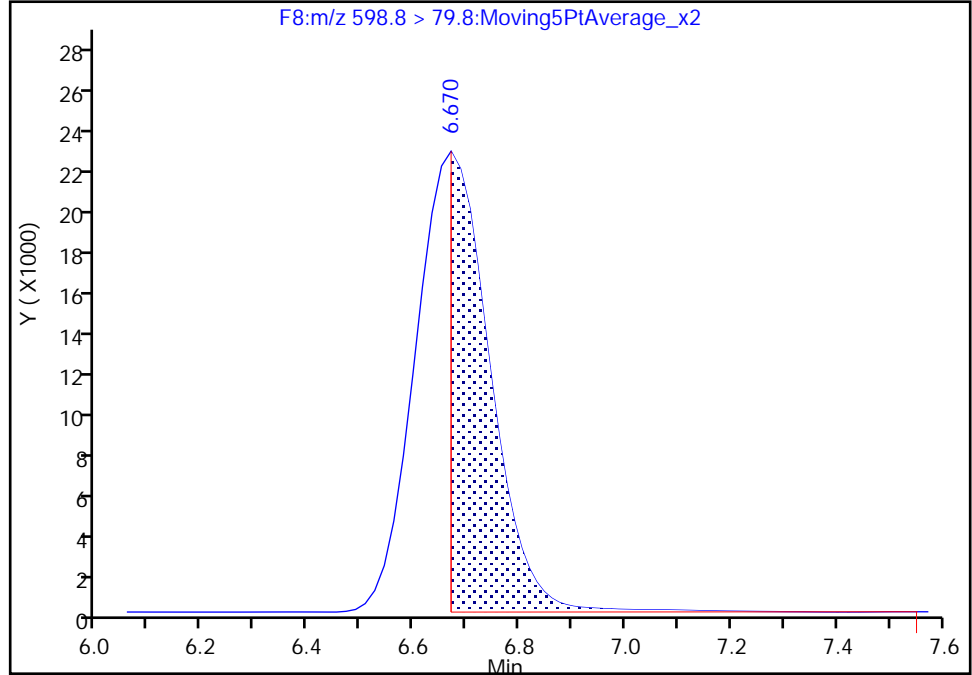
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Injection Date: 17-Oct-2018 14:39:50 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

31 Perfluorodecanesulfonic acid, CAS: 335-77-3

Signal: 1

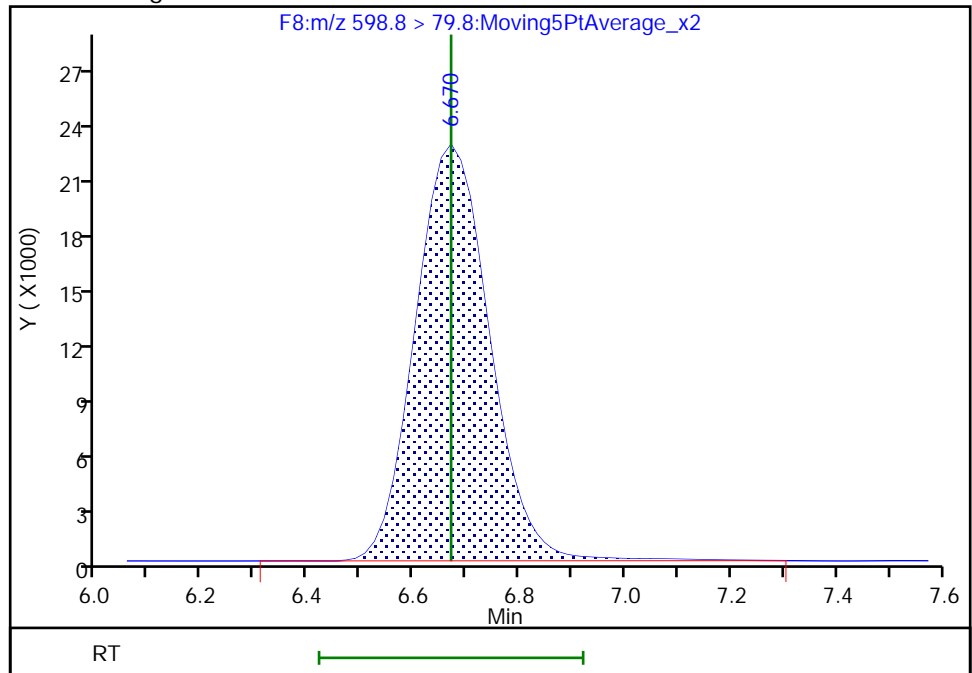
RT: 6.67
Area: 114572
Amount: 17.892788
Amount Units: ng/ml

Processing Integration Results



RT: 6.67
Area: 217089
Amount: 30.269536
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:06:43
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington

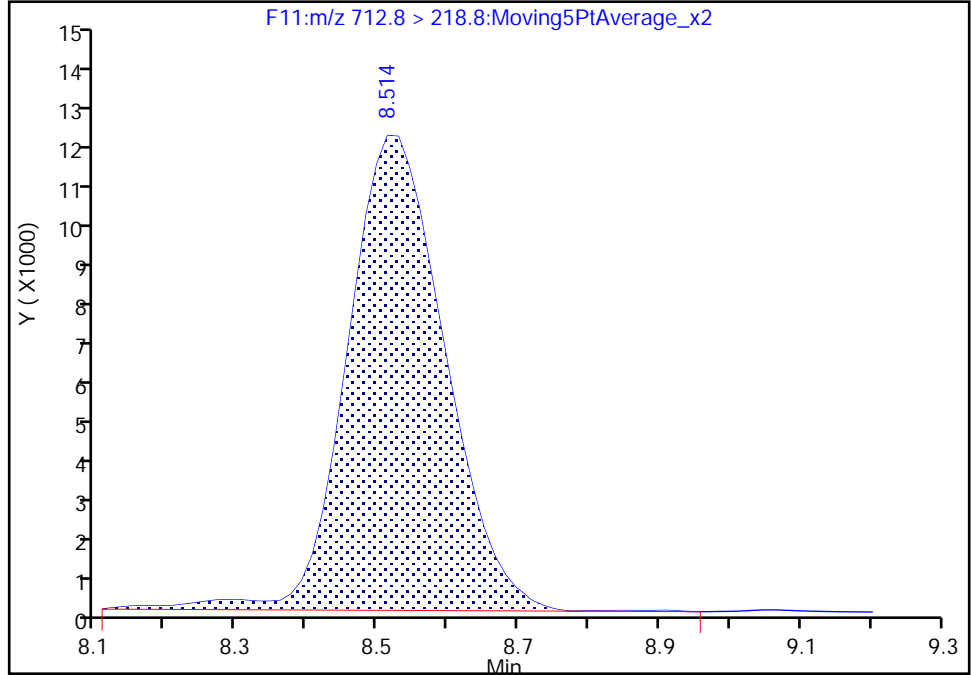
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Injection Date: 17-Oct-2018 14:39:50 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

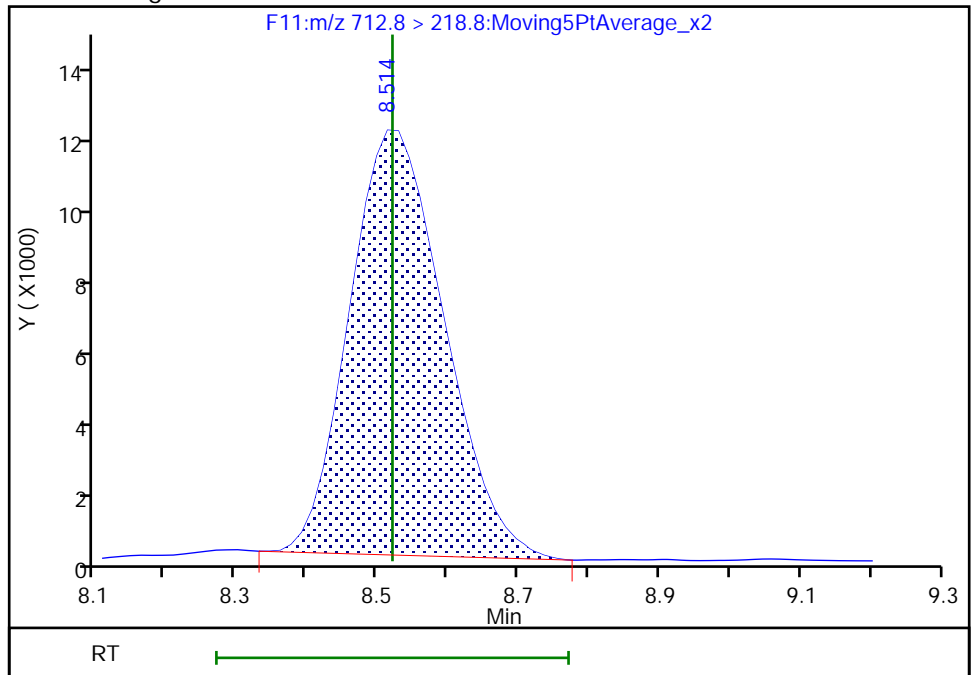
RT: 8.51
Area: 113678
Amount: 29.471920
Amount Units: ng/ml

Processing Integration Results



RT: 8.51
Area: 108828
Amount: 29.350888
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:06:54
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 383 of 589

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A12.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 17-Oct-2018 14:55:40 ALS Bottle#: 0 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-012 IC 7
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:32 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 16:12:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.334	2.336	-0.002	1.000	623368	50.1	100	882	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.334	2.338	-0.004	1.000	527859	49.8		99.6	465	M
D 3 13C5 PFPeA	267.7 > 222.6	2.750	2.754	-0.004	1.000	397986	50.5	101	1175	
4 Perfluoropentanoic acid	262.9 > 218.8	2.750	2.754	-0.004	1.000	1085160	47.9	95.7	4688	
D 6 13C3 PFBS	302.0 > 79.8	2.801	2.813	-0.012	1.000	306130	47.1	101	291	M
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.818	2.820	-0.002	1.006	560395	48.8	97.6	914	
D 7 13C2 PFHxA	314.8 > 269.6	3.164	3.172	-0.008	1.000	710134	50.0	100	1986	
8 Perfluorohexanoic acid	312.8 > 268.6	3.164	3.174	-0.010	1.000	733096	49.7	99.5	2339	
D 9 13C4 PFHpA	366.9 > 321.8	3.703	3.702	0.001	1.000	1290126	49.6	99.2	1572	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.703	3.705	-0.002	1.000	1292036	51.2	102	366	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	350859	46.6	98.6	969	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.749	-0.001	1.000	551375	48.6	97.2	12377	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.325	0.005	1.000	108495	46.8	98.4	1011	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.330	0.0	1.000	111701	49.7	99.3	5844	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	973826	49.1		98.1	2719	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	953489	49.5		98.9	1695	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1057865	50.0			2035	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.412	4.412	0.0	0.856	326805	52.5		105	1065	
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1350557	50.4		101	887	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	1359420	45.8		91.6	3537	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.160	-0.006	1.000	355328	52.7		105	12011	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.161	-0.007	1.000	311818	46.8		97.9	475	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.891	-0.009	1.000	279105	44.4		92.7	4282	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.882	5.896	-0.014	1.000	245658	52.3		105	1651	
D 26 13C2 PFDA										
514.9 > 469.5	5.902	5.918	-0.016	1.000	1338483	48.5		97.0	4311	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.902	5.920	-0.018	1.000	1385659	51.3		103	4004	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	364220	51.7		103	2967	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.000	378059	47.8		95.6	903	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	288272	48.2		96.4	1072	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	278513	50.2		100	3839	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.652	6.668	-0.016	1.291	368285	54.0		108	7410	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.682	-0.012	1.000	1360311	47.3		94.7	1458	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.682	-0.012	1.000	1412068	50.6		101	1368	
D 35 13C8 FOSA										
505.8 > 77.8	6.944	6.955	-0.011	1.000	642325	50.1		100	2911	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.944	6.957	-0.013	1.000	562051	51.7		103	5475	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.339	7.359	-0.020	0.997	1574332	49.9		99.8	3758	
D 37 13C2 PFDaA										
614.8 > 569.6	7.362	7.362	0.0	1.000	1836762	50.5		101	2932	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.962	7.975	-0.013	0.935	1612389	49.2		98.3	4122	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1677487	50.3		101	1366	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.521	-0.007	1.000	1605926	49.1		98.2	1770	
712.8 > 168.8	8.514	8.521	-0.007	1.000	313490		5.12(0.00-0.00)	98.2	251	
712.8 > 218.8	8.514	8.521	-0.007	1.000	178724		8.99(0.00-0.00)	98.2	142	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L5_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A12.d

Injection Date: 17-Oct-2018 14:55:40

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

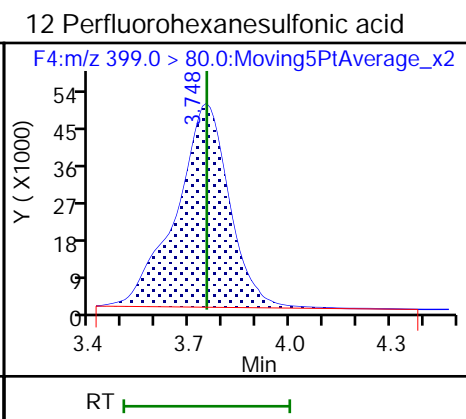
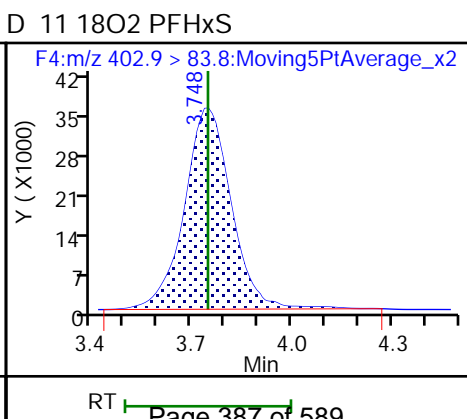
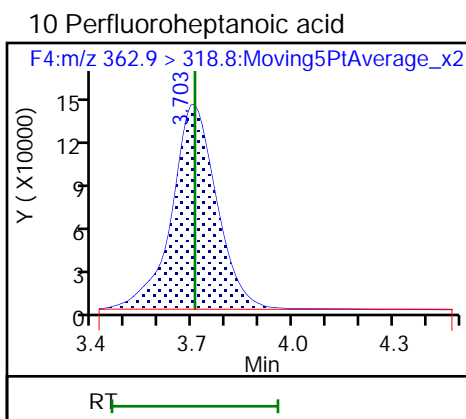
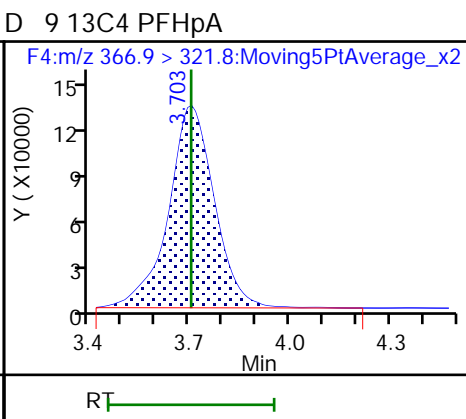
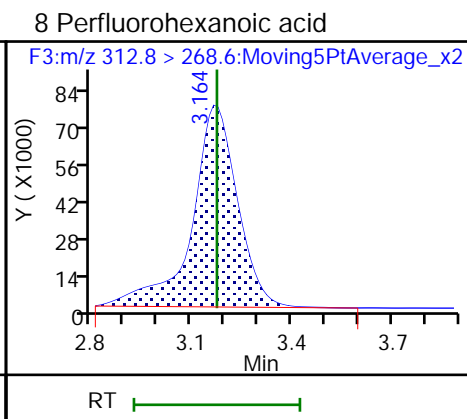
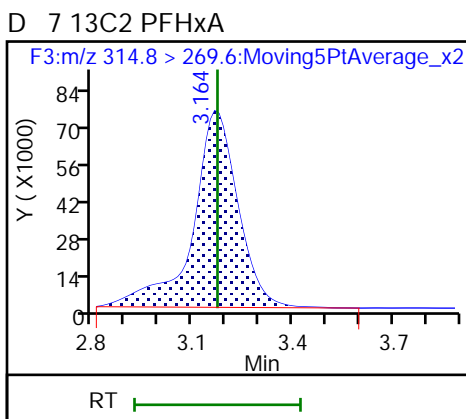
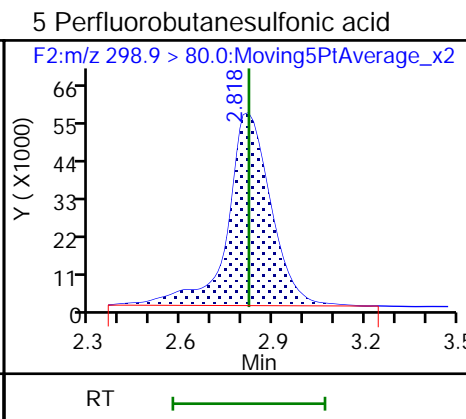
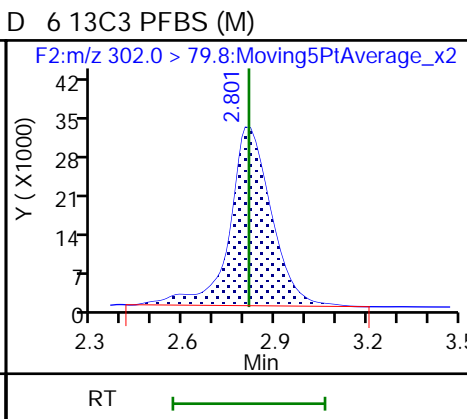
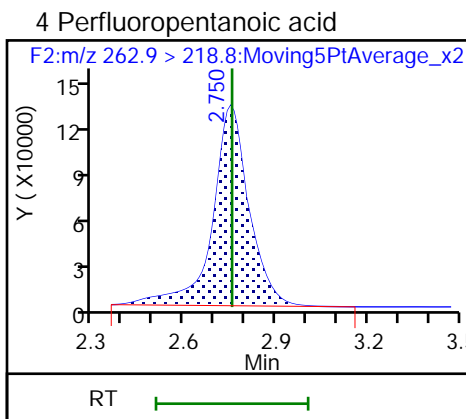
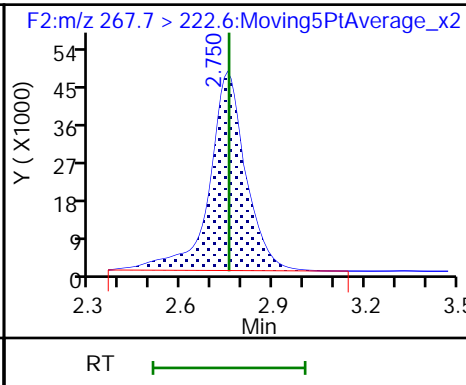
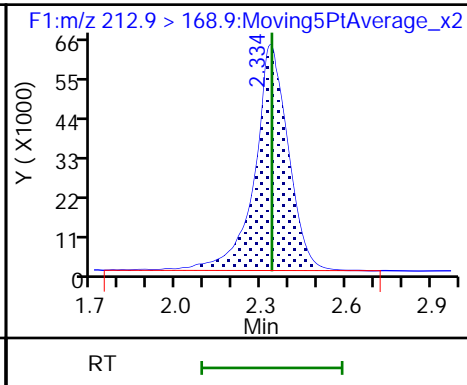
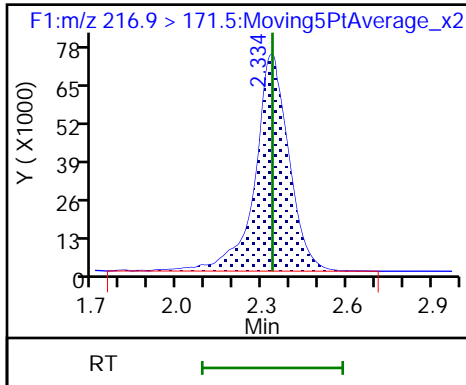
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

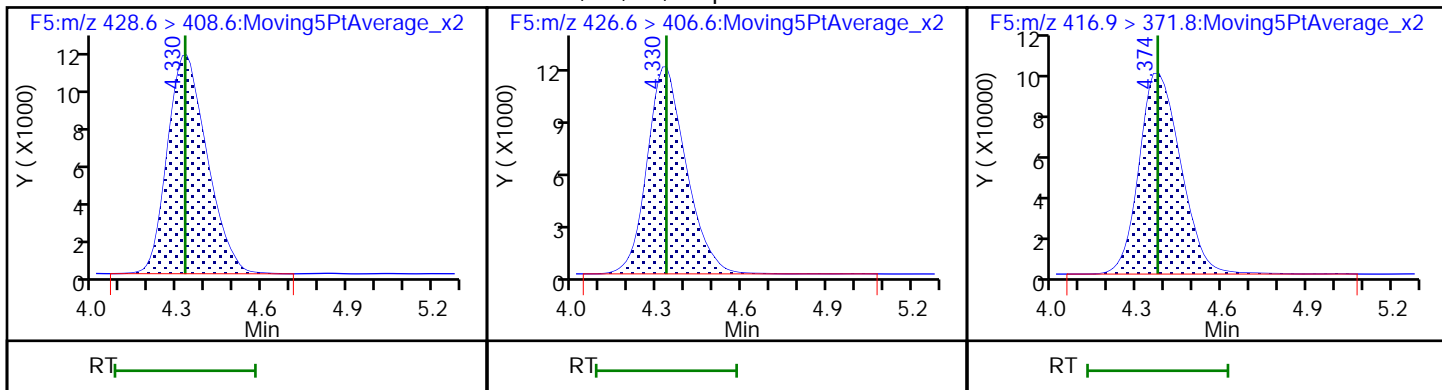
2 Perfluorobutanoic acid (M)

D 3 13C5 PFPeA



D 13 M2-6:2 FTS

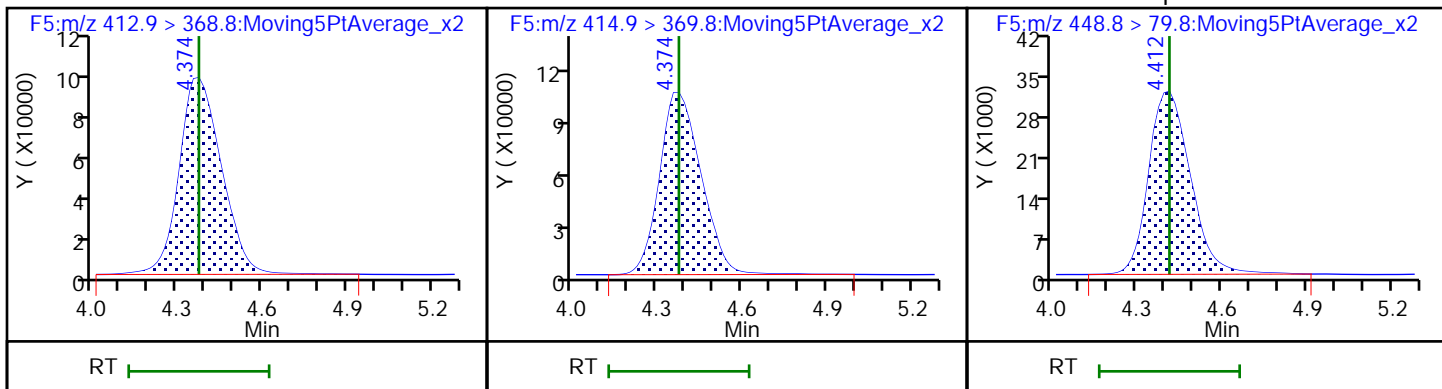
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

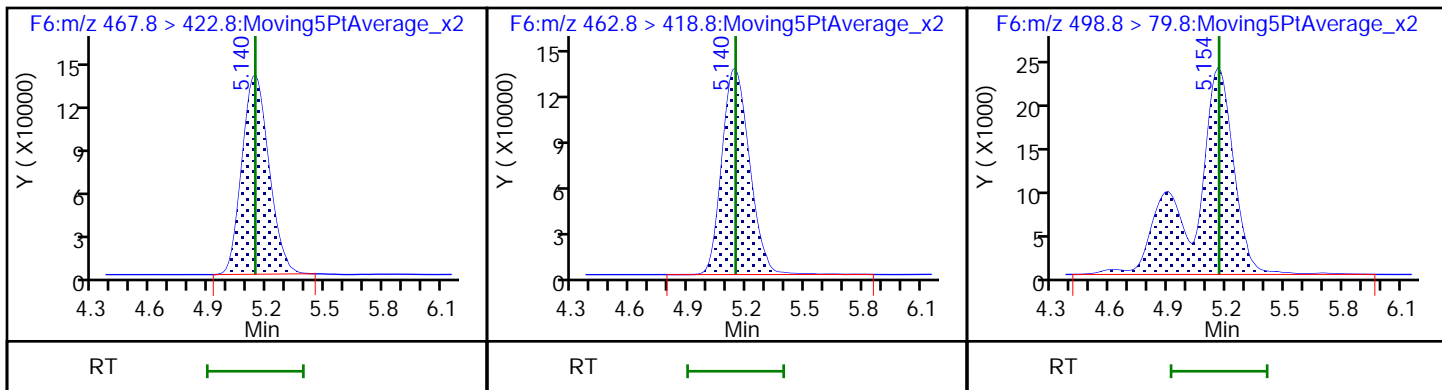
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

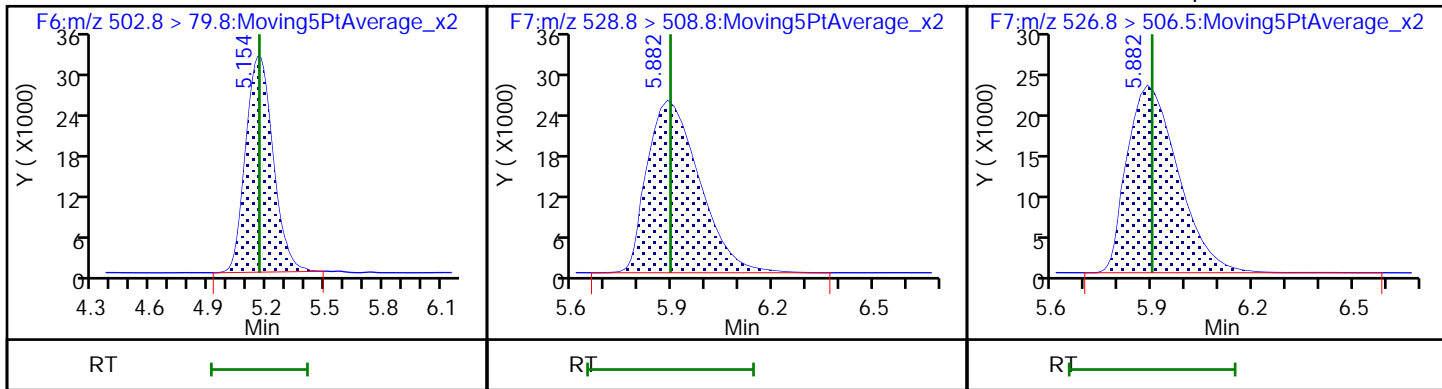
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

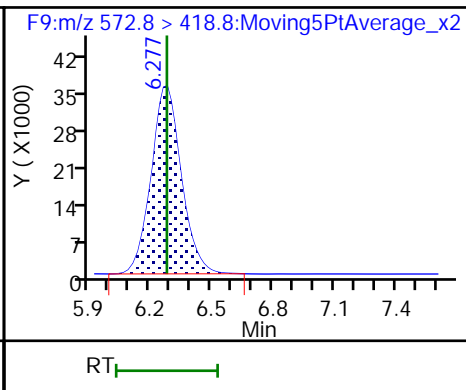
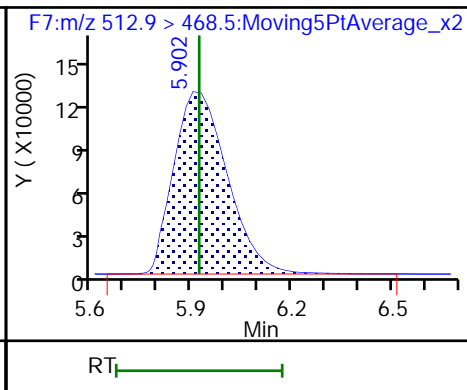
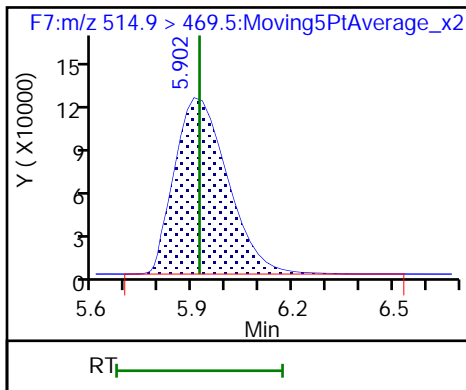
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

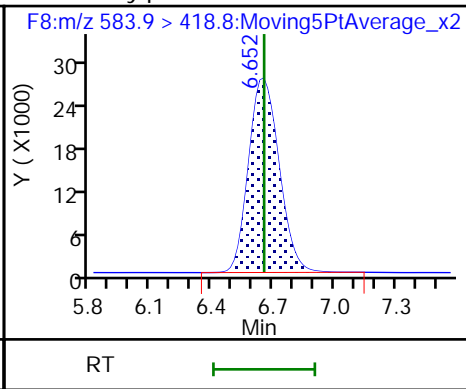
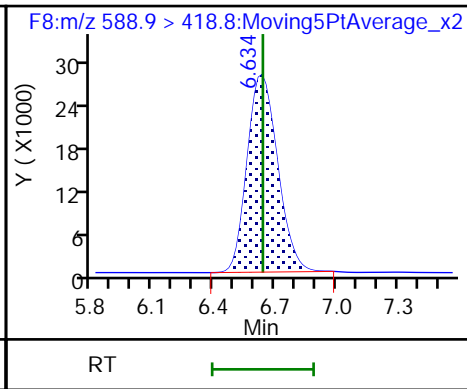
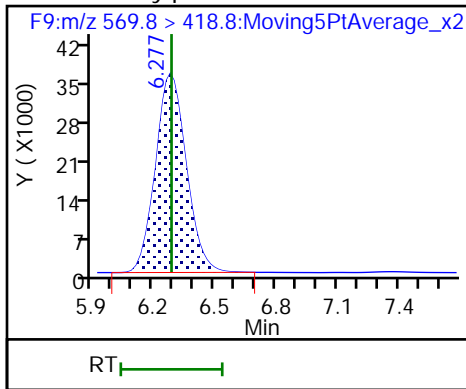
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

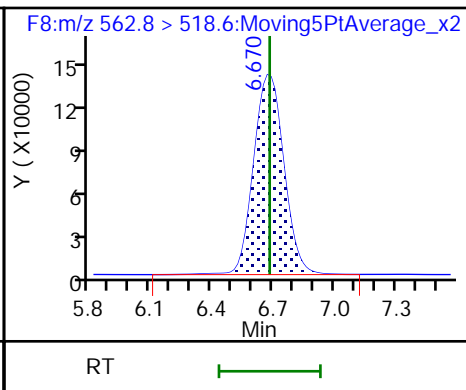
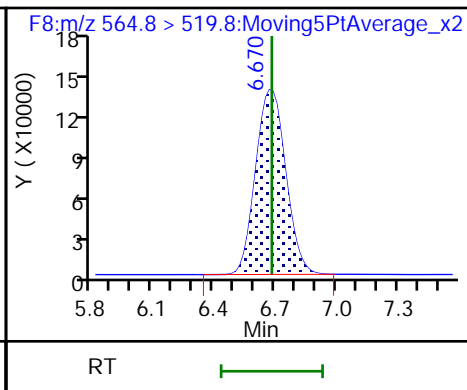
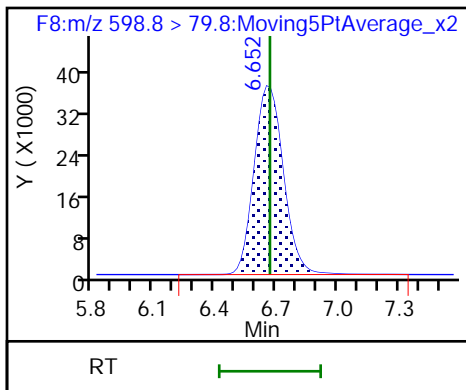
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

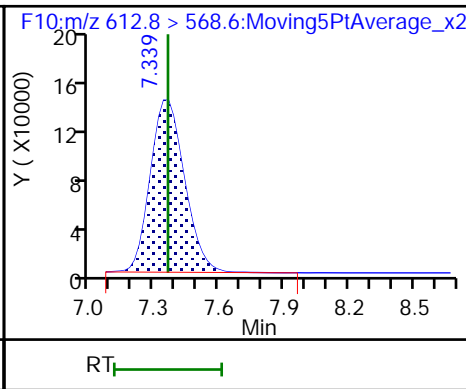
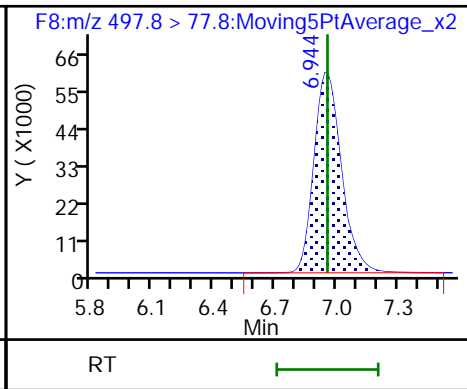
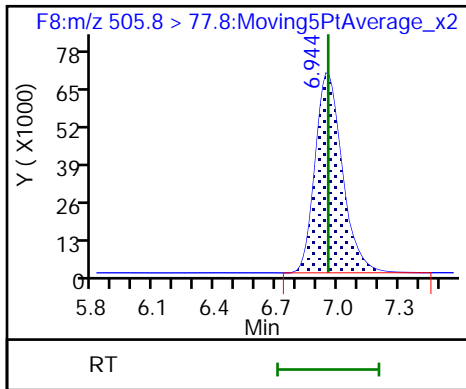
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

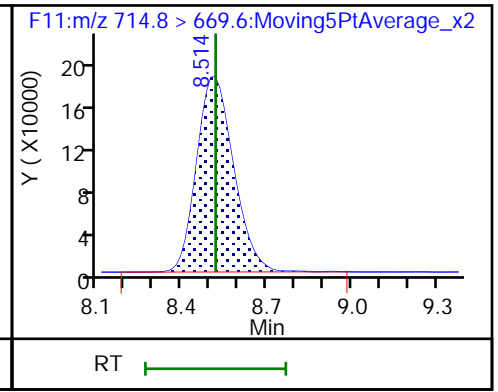
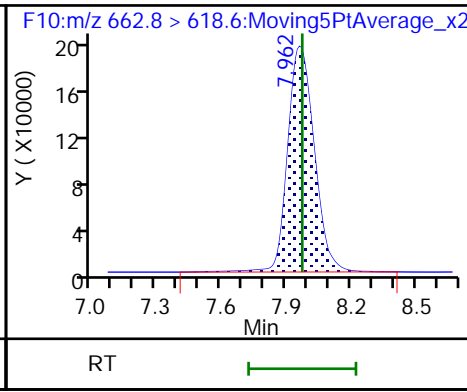
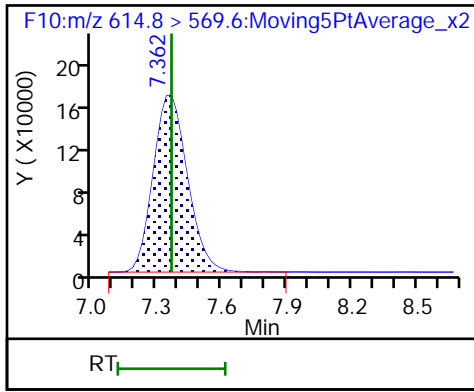
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid

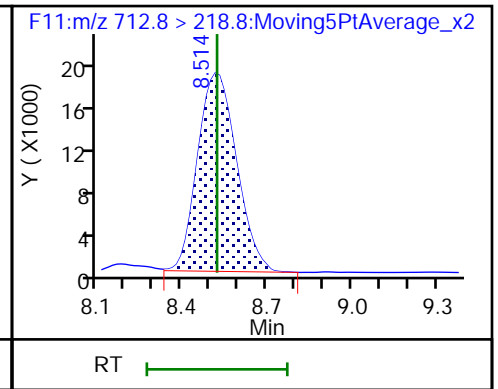
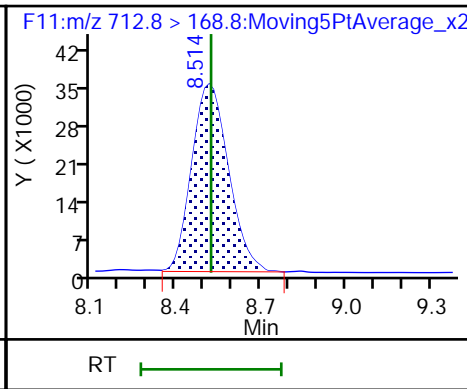
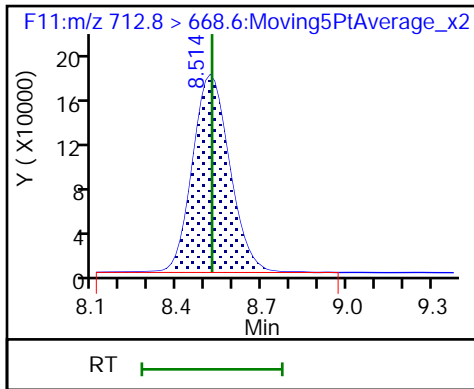
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid



TestAmerica Burlington

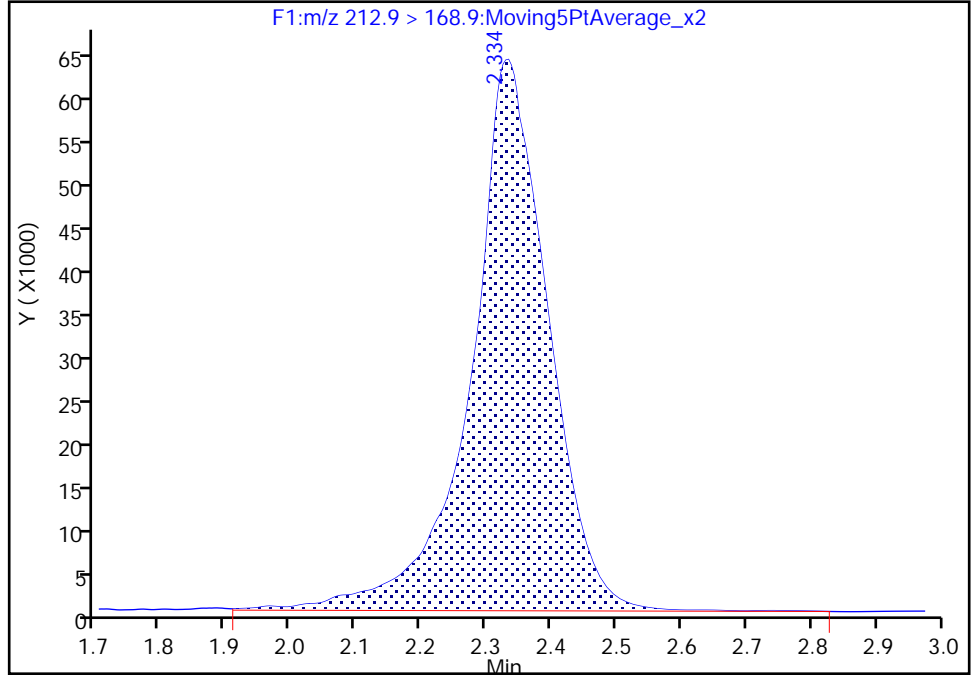
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Injection Date: 17-Oct-2018 14:55:40 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

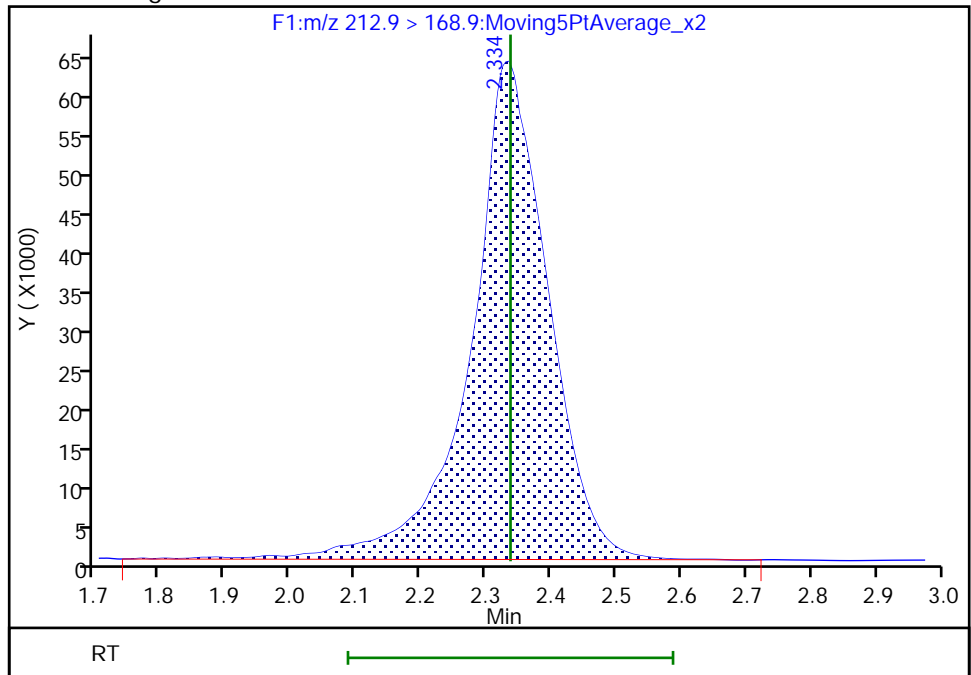
RT: 2.33
Area: 528885
Amount: 49.938106
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 527859
Amount: 49.781263
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:09:47
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 391 of 589

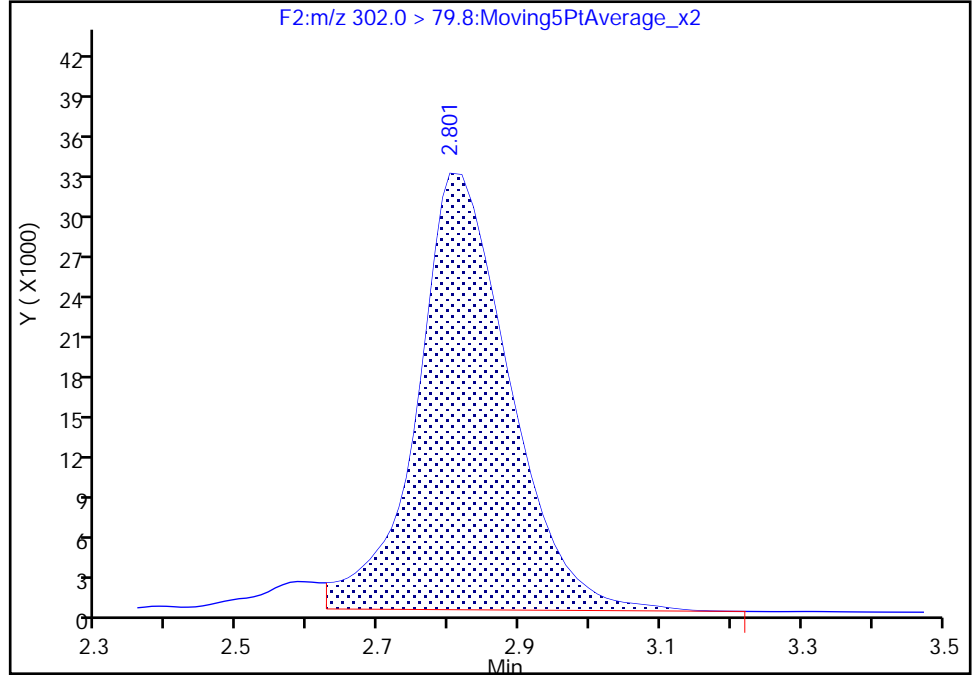
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A12.d
Injection Date: 17-Oct-2018 14:55:40 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 6 13C3 PFBS, CAS: STL02337
Signal: 1

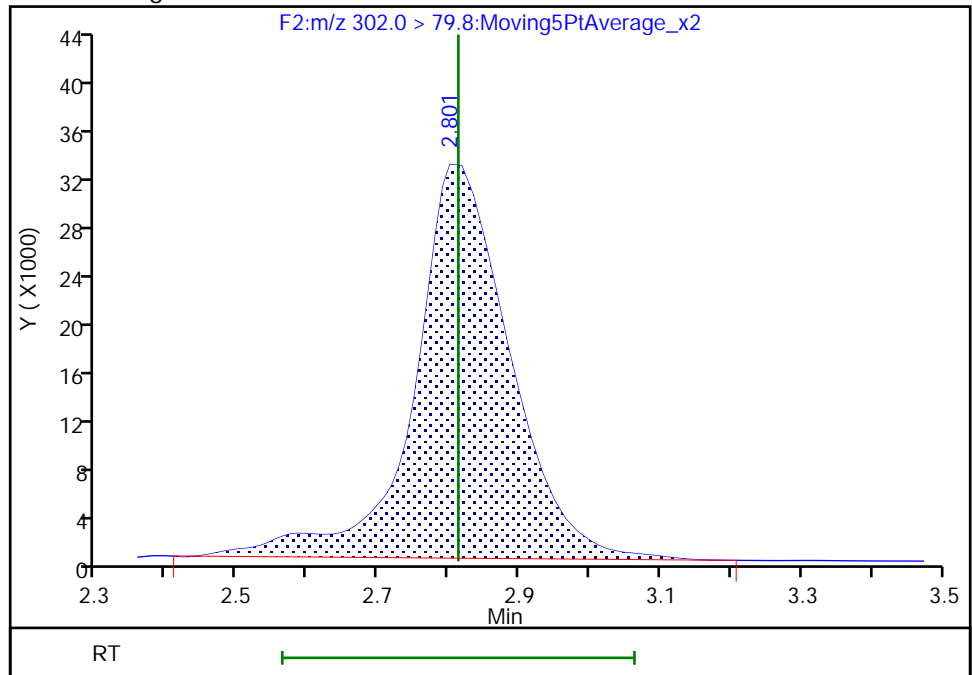
RT: 2.80
Area: 295751
Amount: 45.714837
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 306130
Amount: 47.060837
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:09:59
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 392 of 589

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A13.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 17-Oct-2018 15:11:38 ALS Bottle#: 0 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-013 IC 8
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:35 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb

Date: 17-Oct-2018 16:13:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.338	2.336	0.002	1.000	613765	53.7	107	1138	M
2 Perfluorobutanoic acid	212.9 > 168.9	2.338	2.338	0.0	1.000	1047755	100.6	101	682	M
D 3 13C5 PFPeA	267.7 > 222.6	2.750	2.754	-0.004	1.000	398357	54.9	110	1479	
4 Perfluoropentanoic acid	262.9 > 218.8	2.750	2.754	-0.004	1.000	2135896	94.1	94.1	5665	
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.814	0.004	1.000	310742	51.9	112	424	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.818	2.820	-0.002	1.000	1158992	99.4	99.4	2947	
D 7 13C2 PFHxA	314.8 > 269.6	3.177	3.172	0.005	1.000	663953	50.8	102	2868	
8 Perfluorohexanoic acid	312.8 > 268.6	3.177	3.174	0.003	1.000	1377885	100.0	100	8086	
D 9 13C4 PFHpA	366.9 > 321.8	3.703	3.702	0.001	1.000	1195044	49.9	99.9	976	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.703	3.705	-0.002	1.000	2372623	101.6	102	426	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	362565	52.4	111	2472	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.749	-0.001	1.000	1152538	98.6	98.6	2442	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.325	0.005	1.000	113019	52.9	111	512	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.330	0.0	1.000	219475	93.7	93.7	833	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	881871	48.3		96.6	1989	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	1803420	103.3		103	1267	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		973339	50.0			849	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.412	4.412	0.0	0.854	626455	99.1		99.1	1958	
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1246159	50.6		101	1598	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	2471507	90.2		90.2	8089	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.160	-0.006	0.997	706214	103.2		103	1867	
D 22 13C4 PFOS										
502.8 > 79.8	5.168	5.161	0.007	1.000	316504	51.6		108	643	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.891	-0.009	1.000	300907	52.0		109	561	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.902	5.896	0.006	1.003	484542	95.6		95.6	1889	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1229016	48.4		96.8	18042	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.921	0.005	1.000	2460309	99.2		99.2	1258	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	365274	56.3		113	1460	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.000	760209	95.8		95.8	840	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	281091	51.1		102	1888	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	541296	100.0		100	6363	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.668	0.002	1.291	688953	99.5		99.5	3356	M
D 32 13C2 PFUnA										
564.8 > 519.8	6.688	6.682	0.006	1.000	1288532	48.7		97.5	2398	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.682	0.006	1.000	2593532	98.1		98.1	2180	M
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	631359	53.5		107	4808	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.959	6.957	0.002	1.000	1106058	103.5		104	9678	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	3051169	101.7		102	2847	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	1747263	52.2		104	5113	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.979	7.975	0.004	0.937	315094	101.0		101	2900	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1594870	52.0		104	1260	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.521	-0.007	1.000	3140954	101.0		101	846	
712.8 > 168.8	8.514	8.521	-0.007	1.000	652382		4.81(0.00-0.00)	101	1180	
712.8 > 218.8	8.514	8.521	-0.007	1.000	364701		8.61(0.00-0.00)	101	178	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L5A_00001

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A13.d

Injection Date: 17-Oct-2018 15:11:38

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

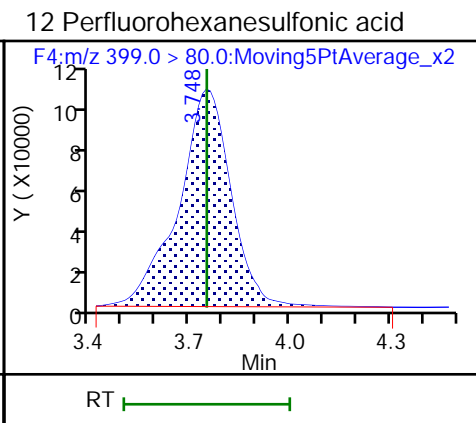
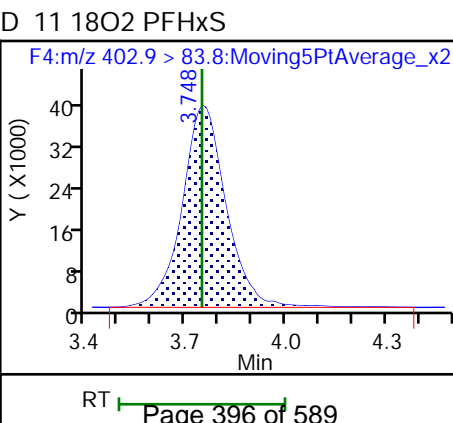
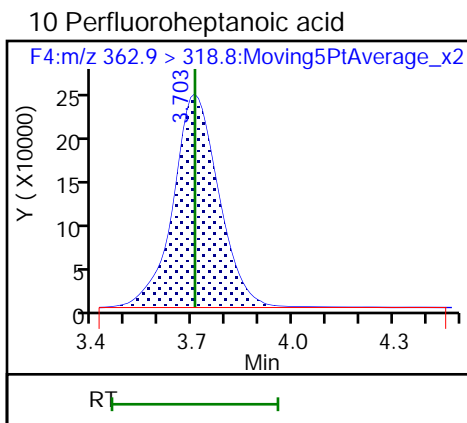
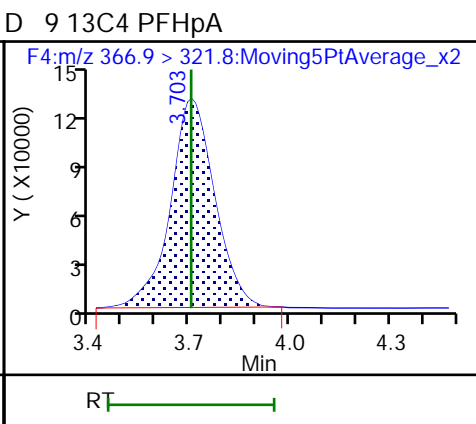
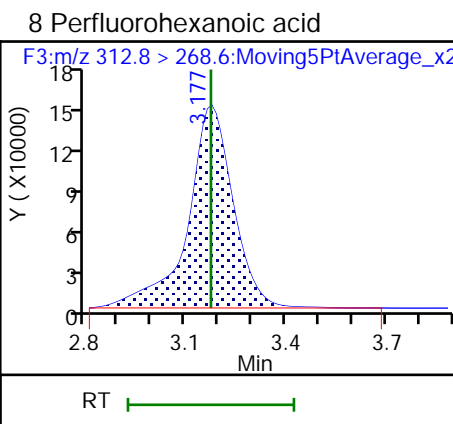
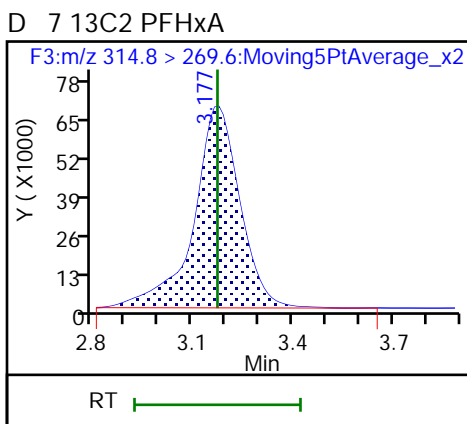
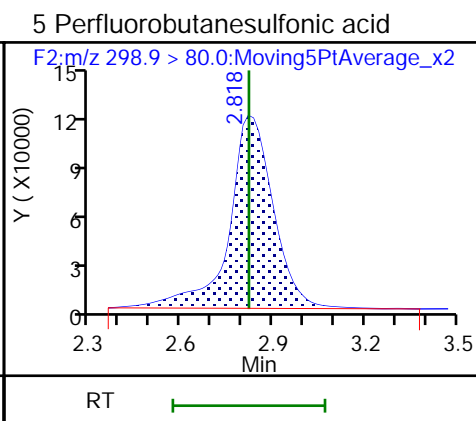
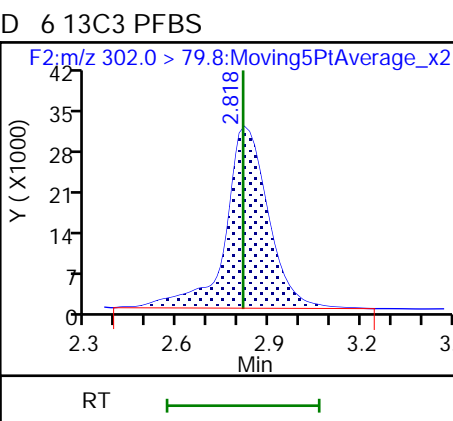
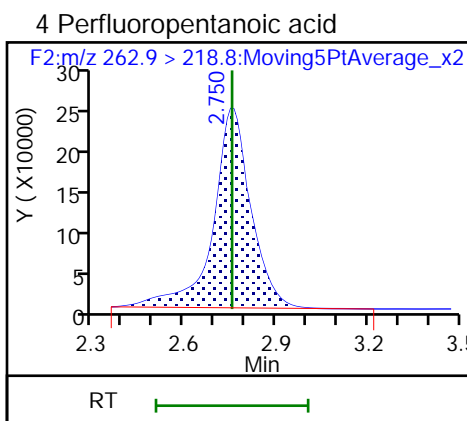
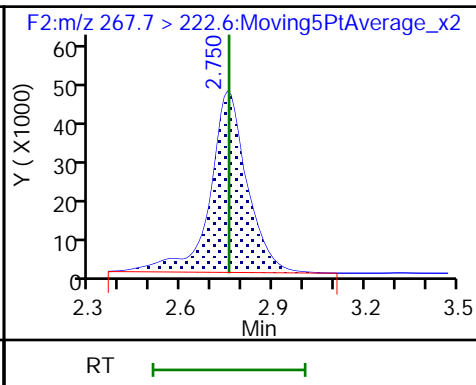
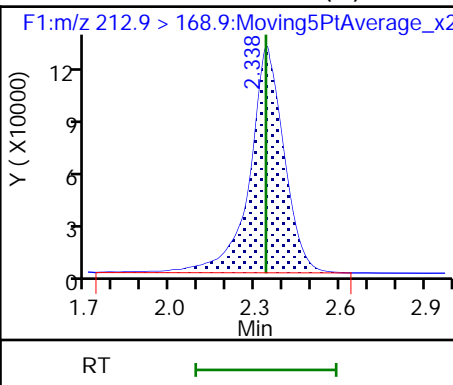
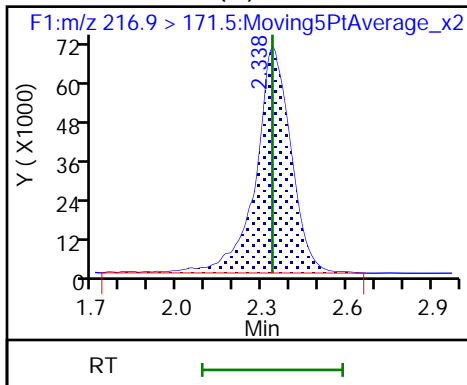
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Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

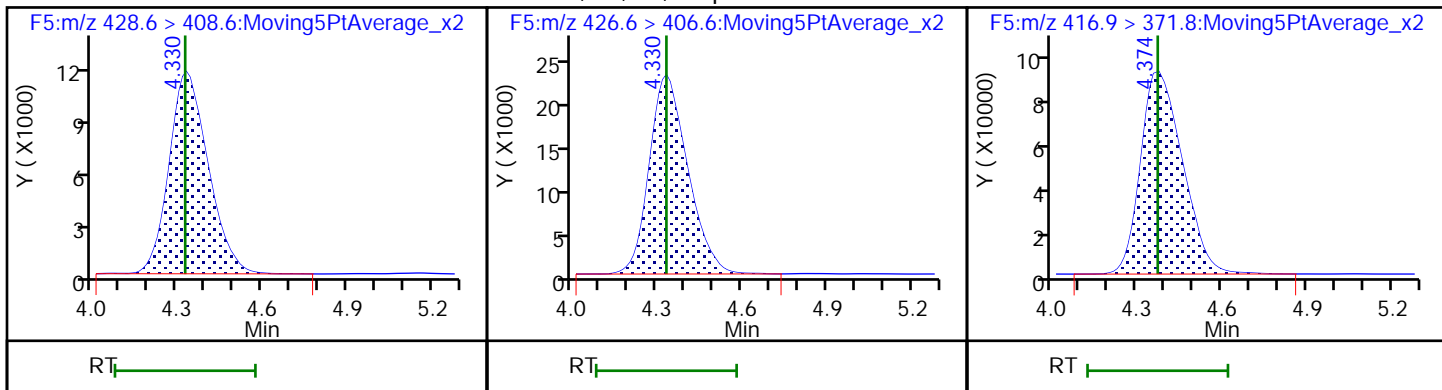
2 Perfluorobutanoic acid (M)

D 3 13C5 PFPeA



D 13 M2-6:2 FTS

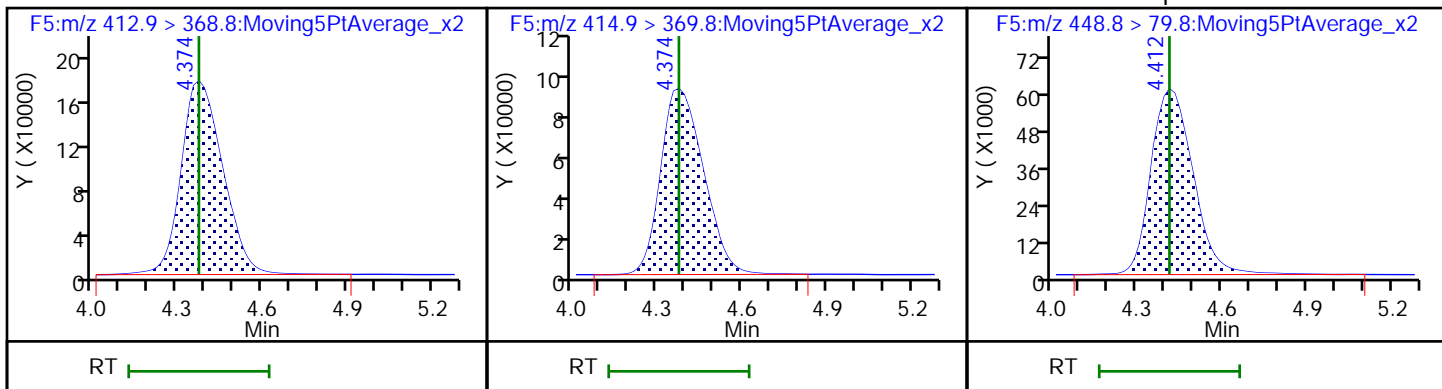
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

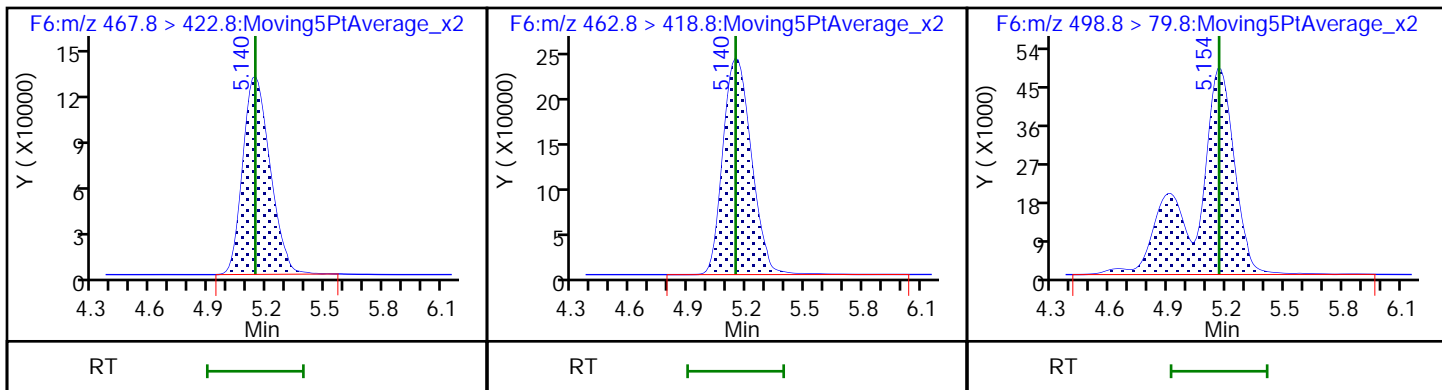
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

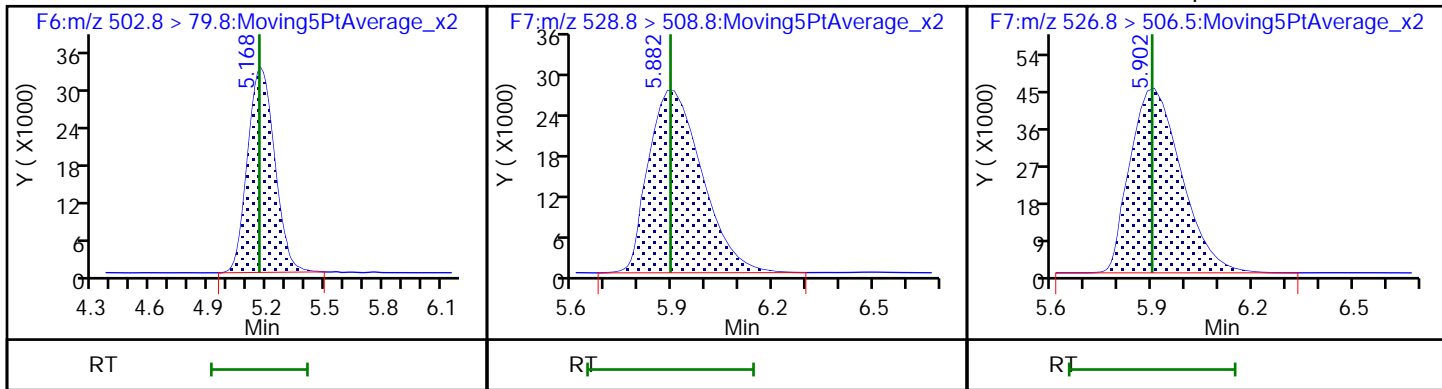
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

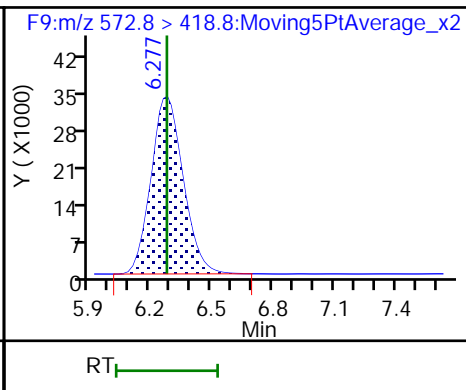
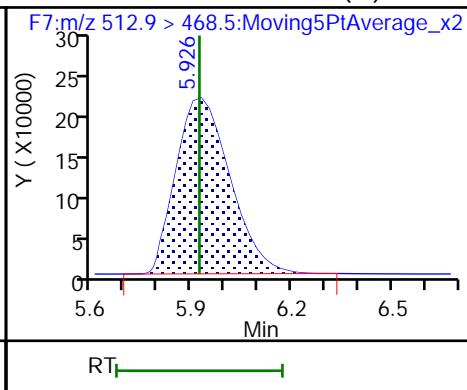
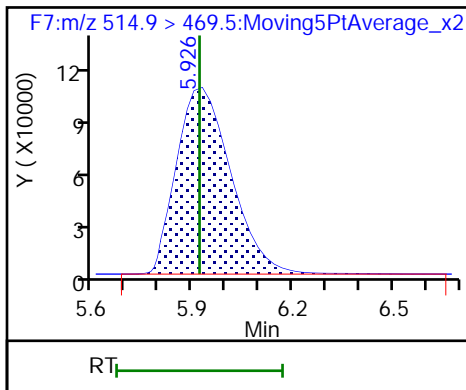
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid (M)

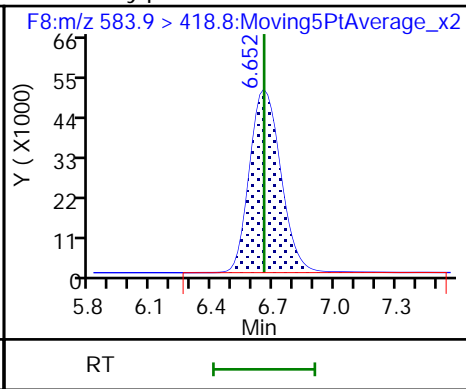
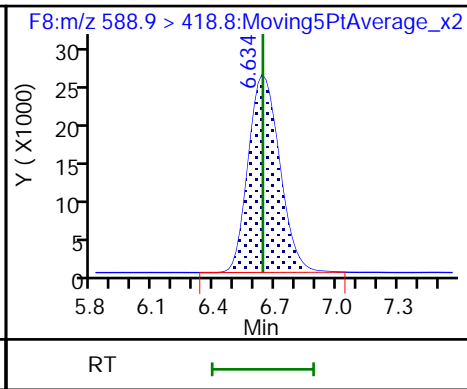
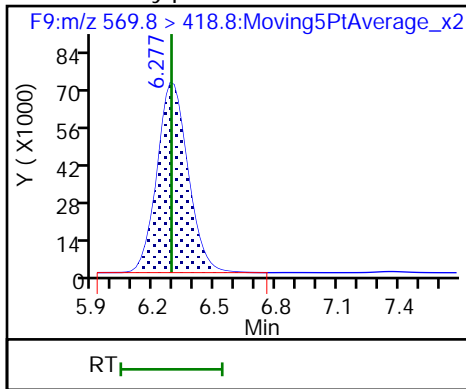
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

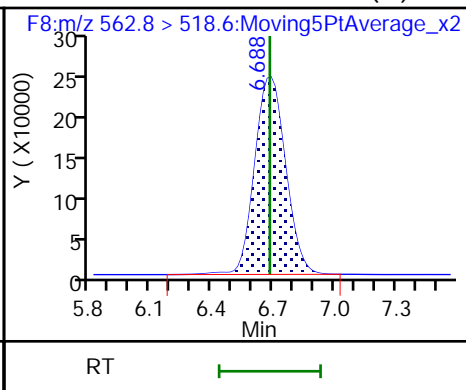
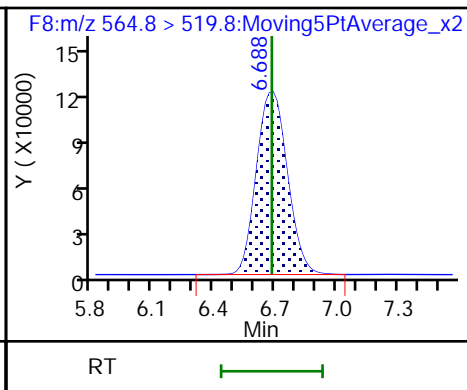
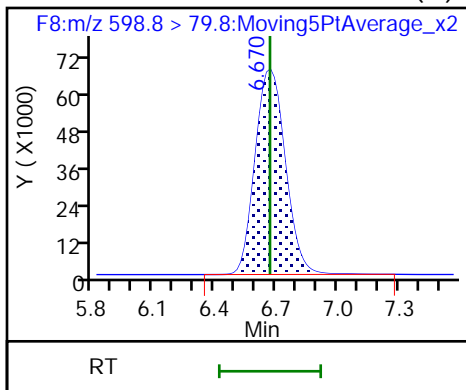
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid (M)

D 32 13C2 PFUnA

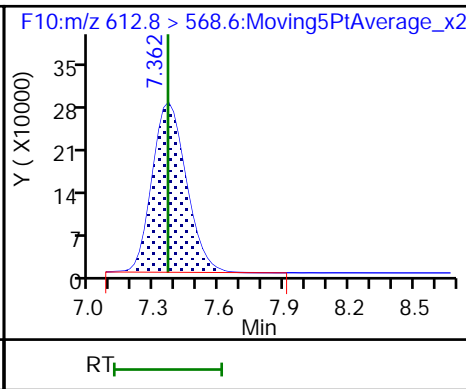
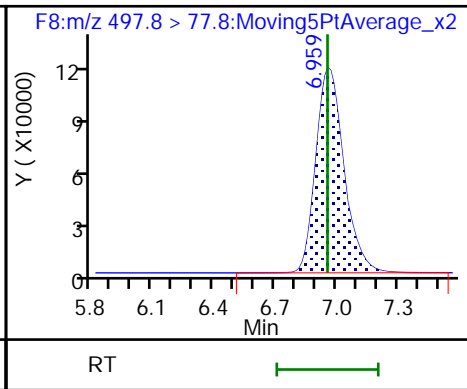
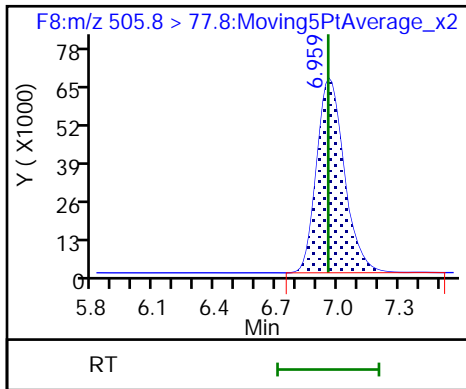
33 Perfluoroundecanoic acid (M)



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

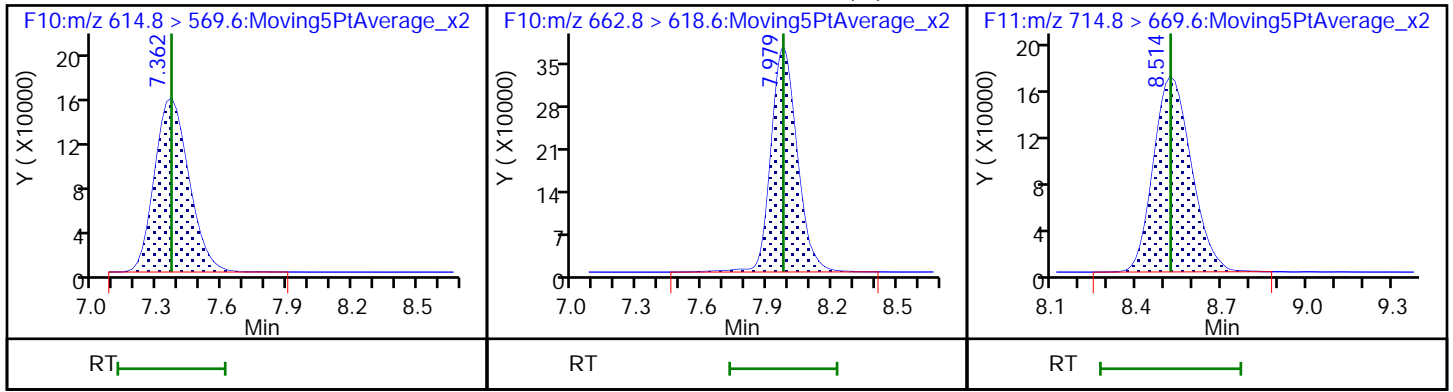
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid (M)

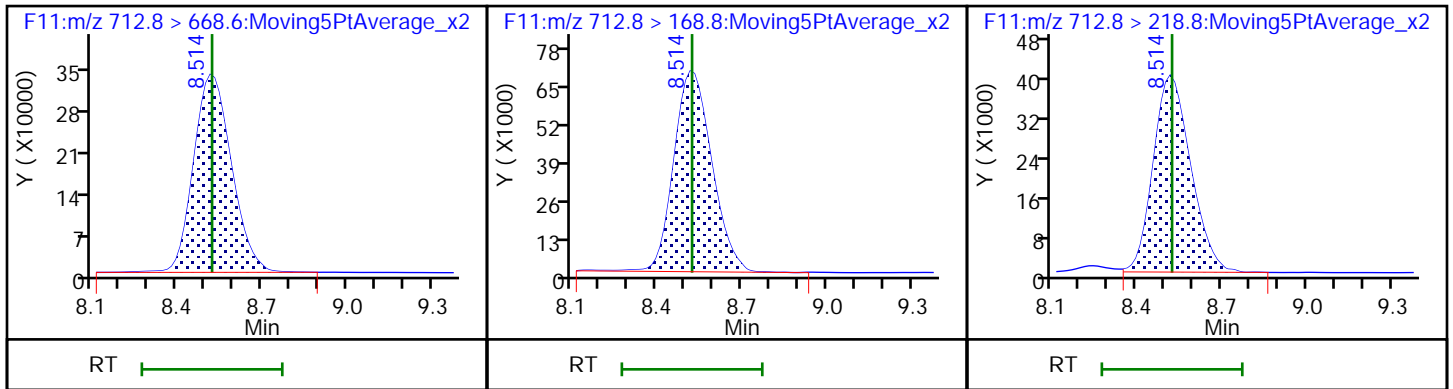
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid



TestAmerica Burlington

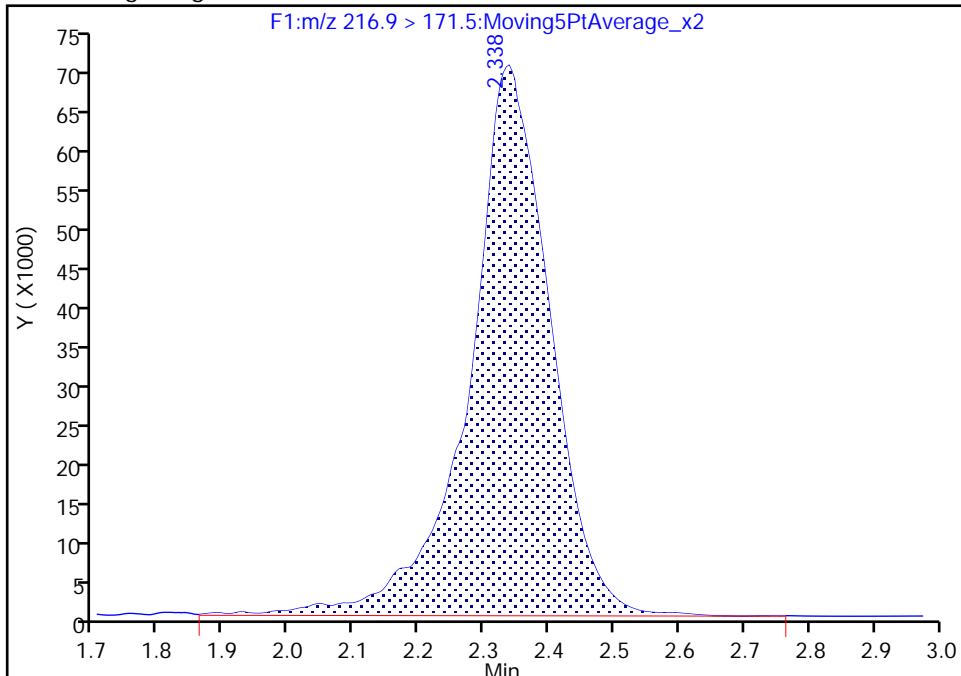
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Injection Date: 17-Oct-2018 15:11:38 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

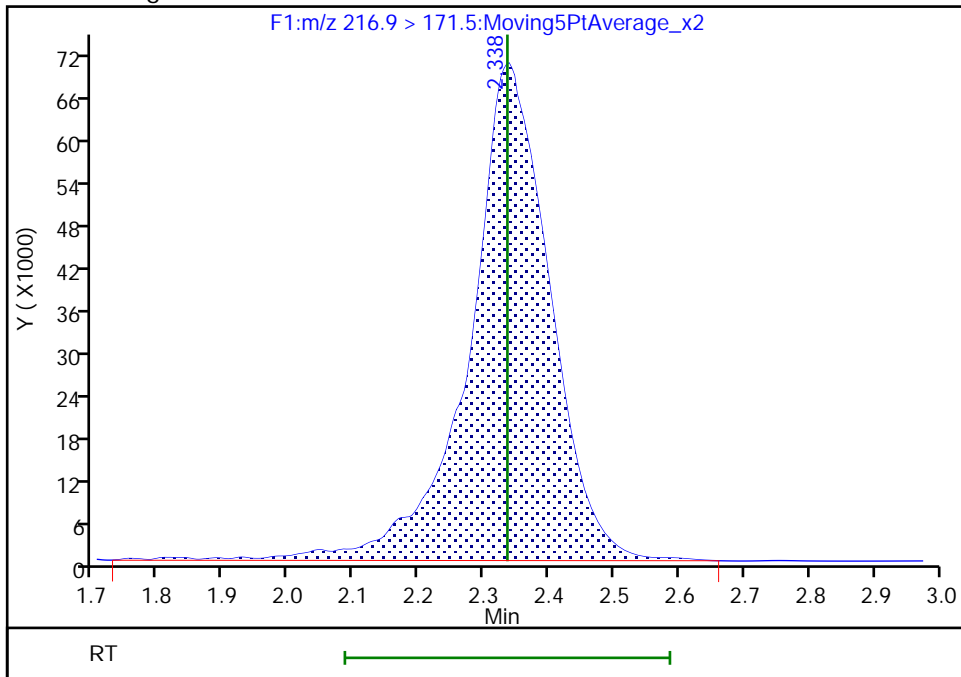
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Area: 612893
Amount: 53.597743
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 613765
Amount: 53.664906
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:12:24
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

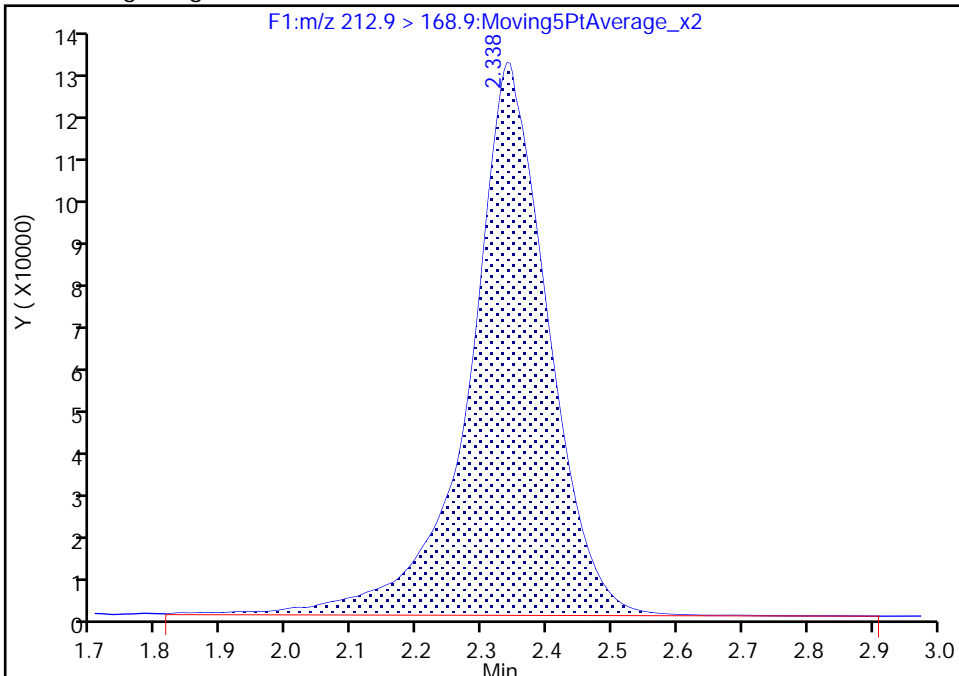
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Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

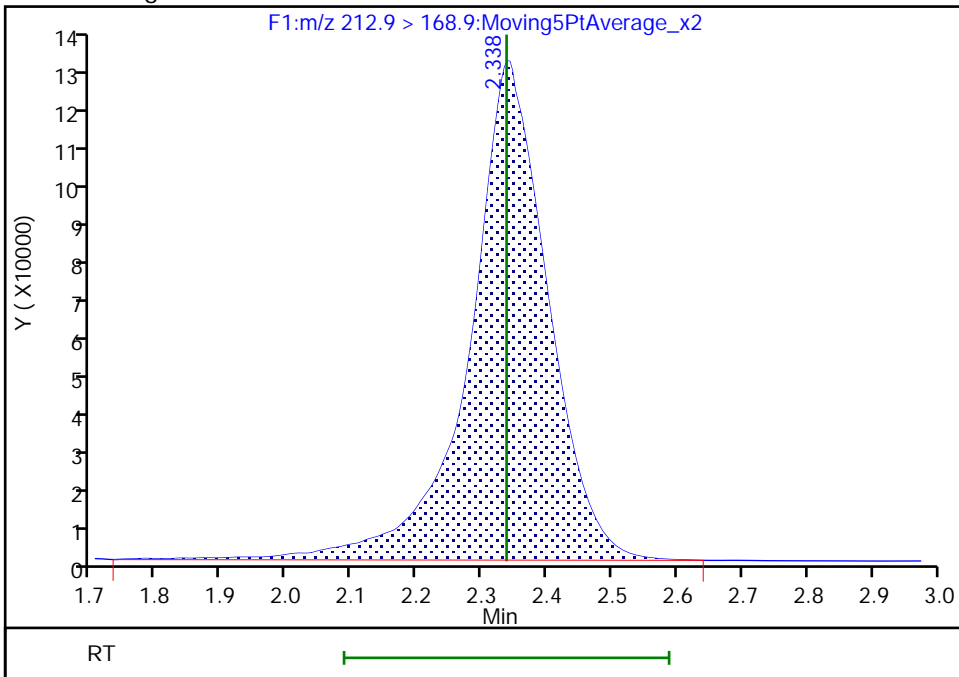
RT: 2.34
Area: 1049717
Amount: 100.9229
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 1047755
Amount: 100.5510
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:12:28
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

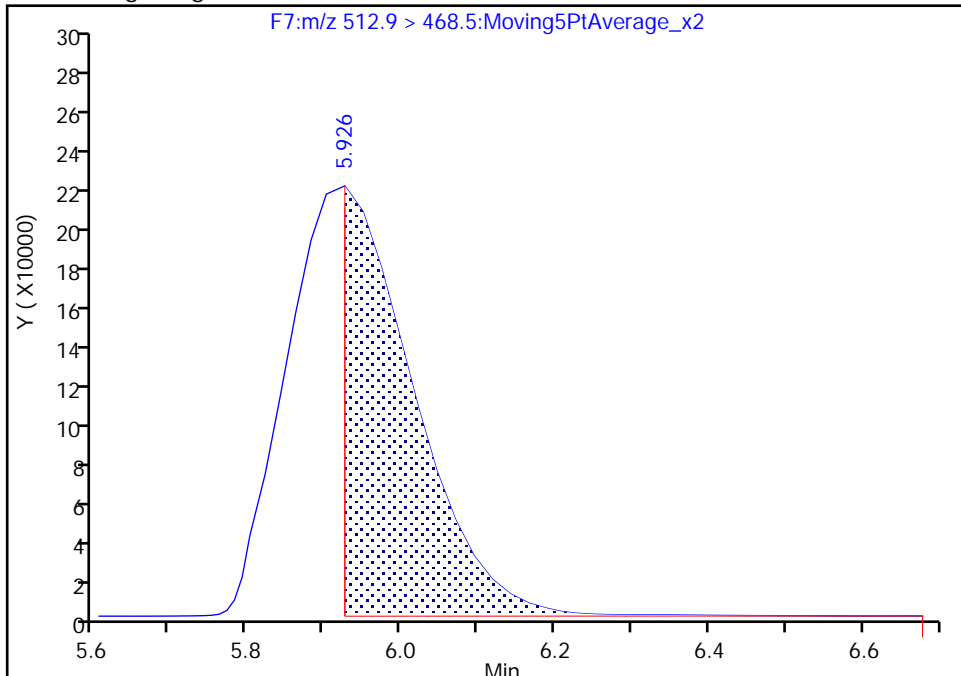
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Injection Date: 17-Oct-2018 15:11:38 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

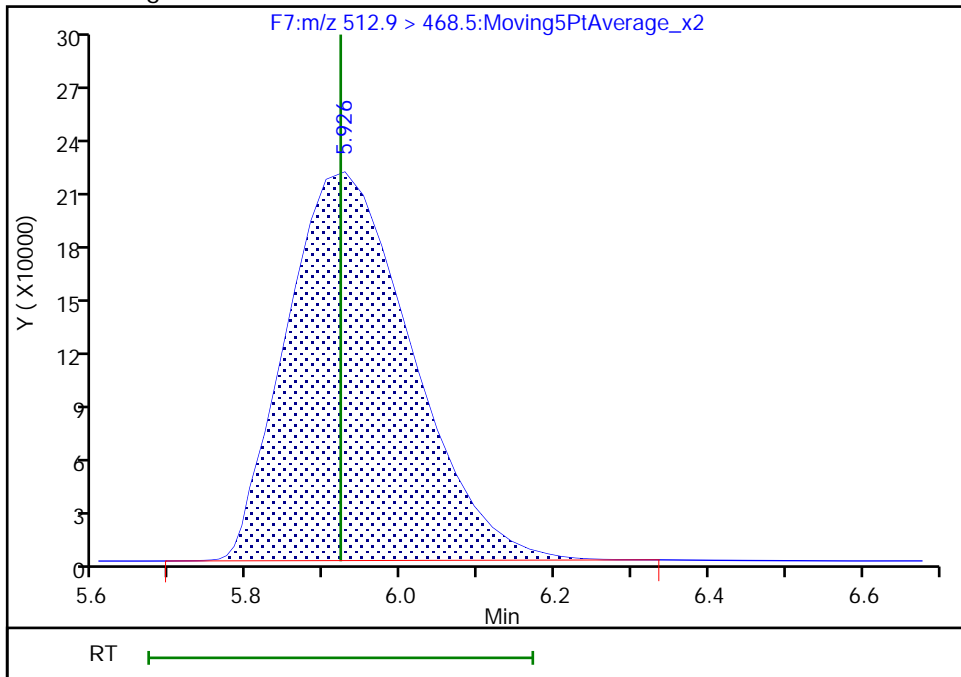
RT: 5.93
Area: 1351468
Amount: 57.310548
Amount Units: ng/ml

Processing Integration Results



RT: 5.93
Area: 2460309
Amount: 99.151900
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:12:44
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

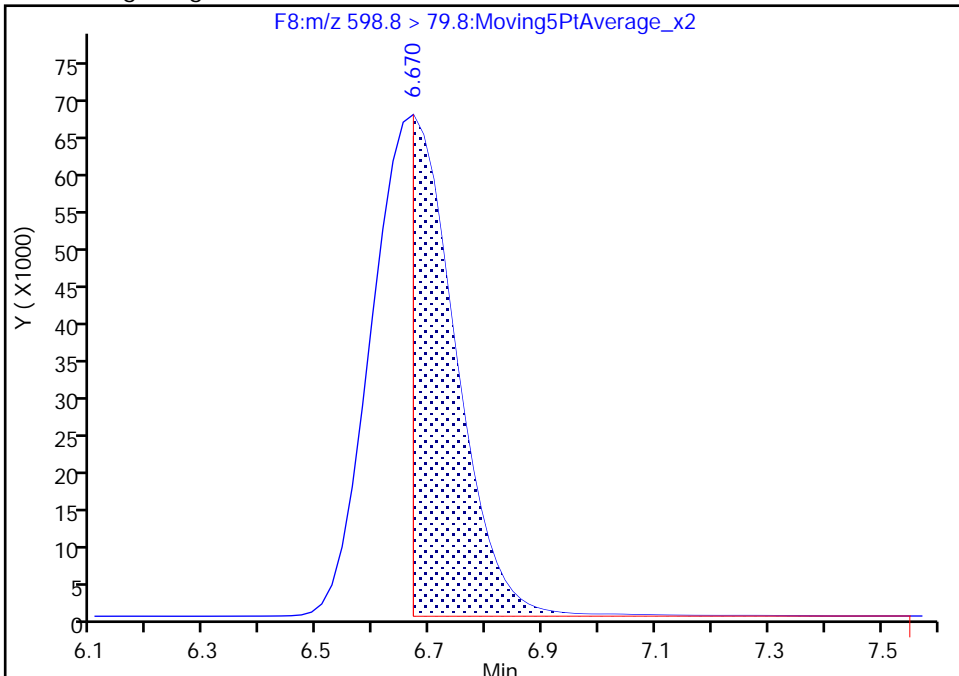
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A13.d
Injection Date: 17-Oct-2018 15:11:38 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

31 Perfluorodecanesulfonic acid, CAS: 335-77-3

Signal: 1

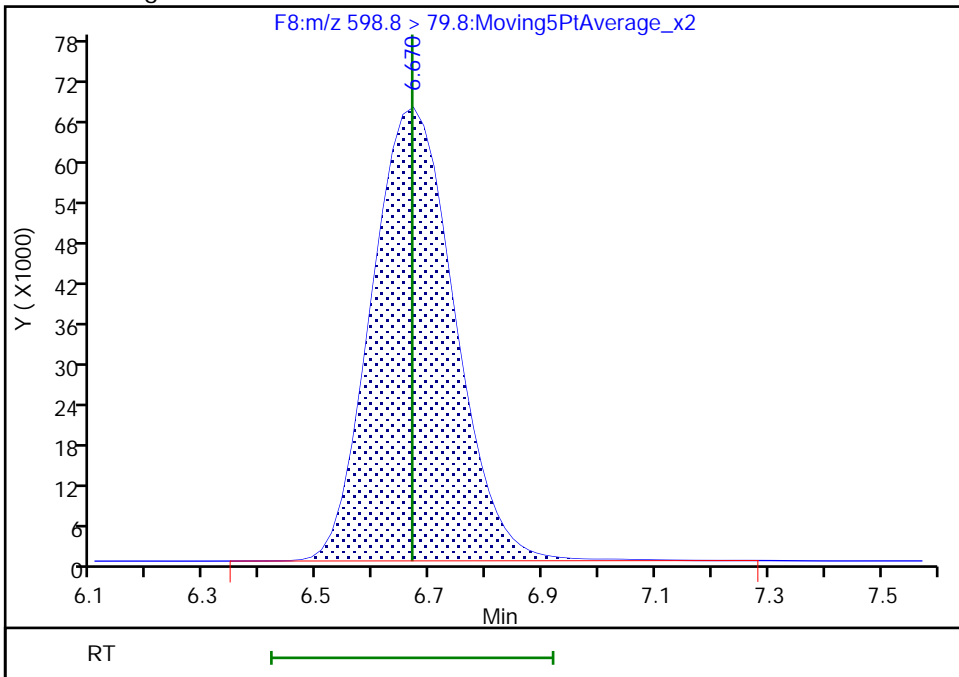
RT: 6.67
Area: 350895
Amount: 53.563898
Amount Units: ng/ml

Processing Integration Results



RT: 6.67
Area: 688953
Amount: 99.465091
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:12:50
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

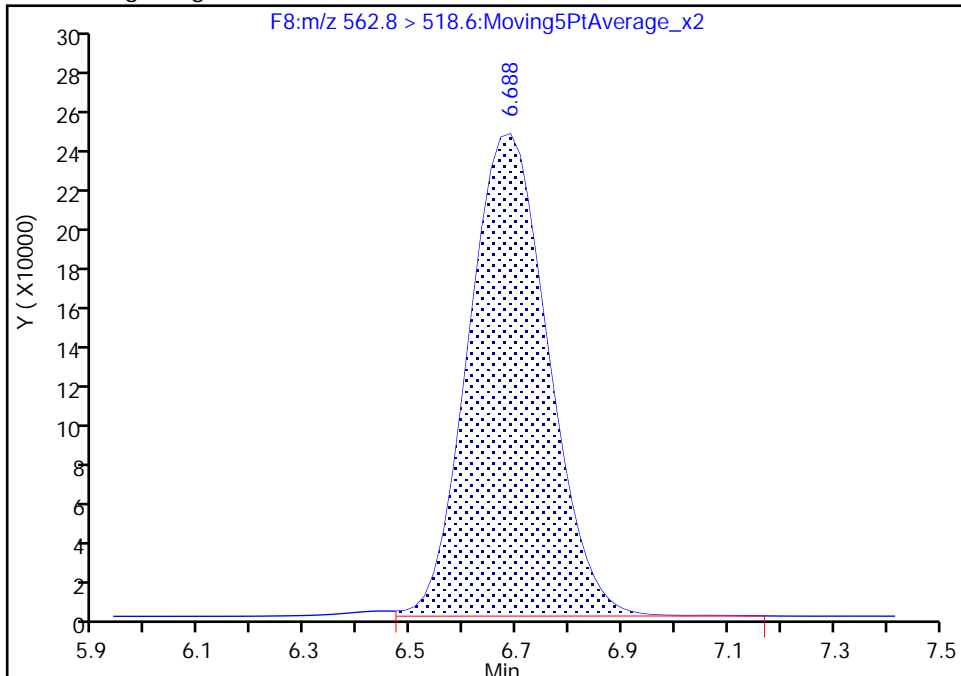
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Injection Date: 17-Oct-2018 15:11:38 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

33 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

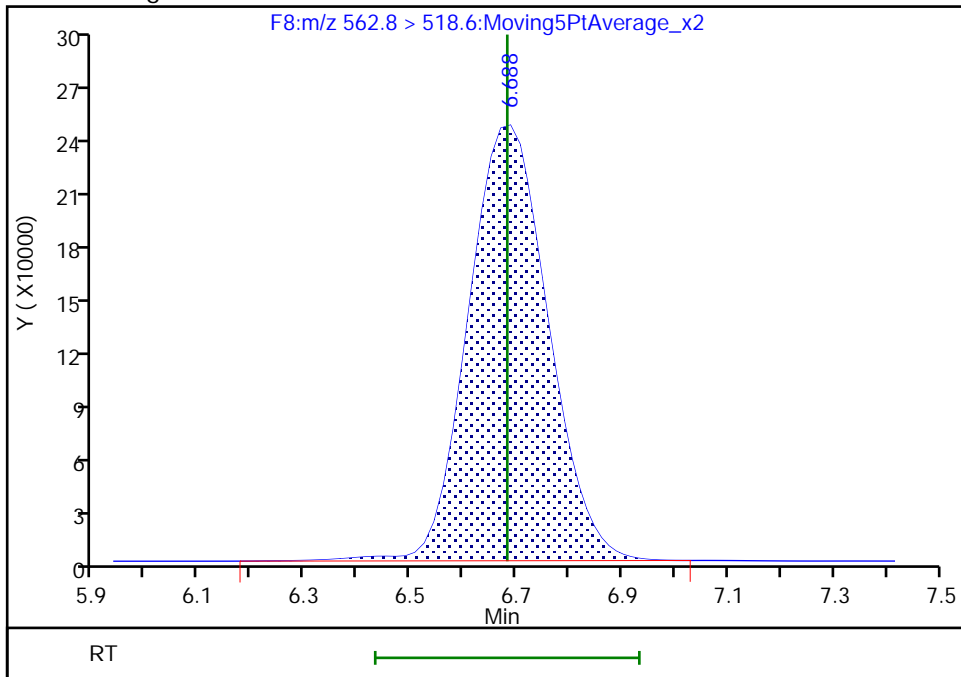
RT: 6.69
Area: 2582819
Amount: 97.254463
Amount Units: ng/ml

Processing Integration Results



RT: 6.69
Area: 2593532
Amount: 98.098825
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:12:55
Audit Action: Manually Integrated

TestAmerica Burlington

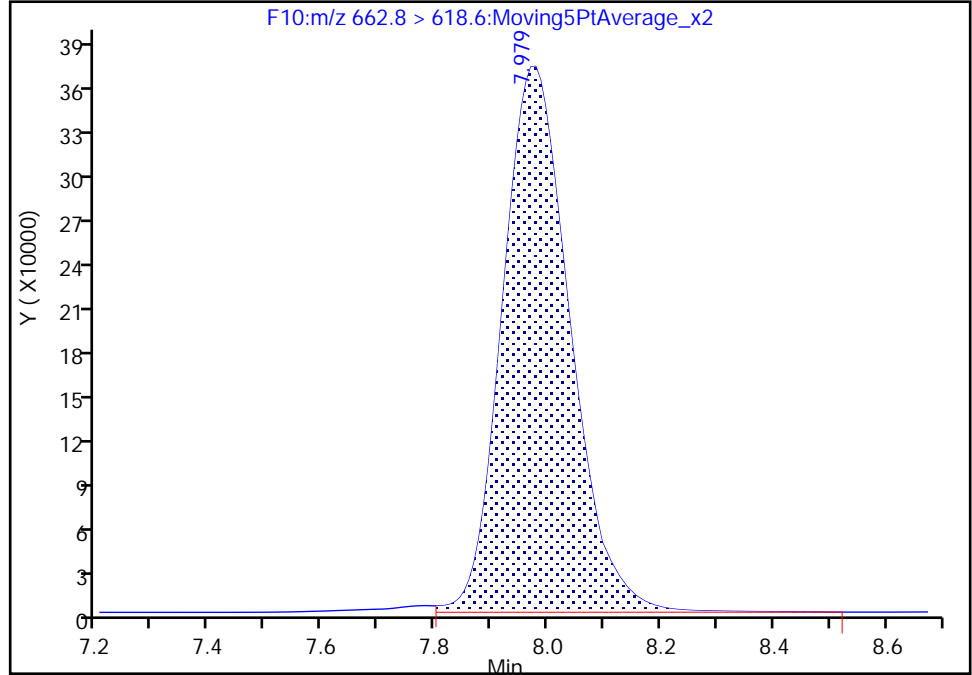
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Injection Date: 17-Oct-2018 15:11:38 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

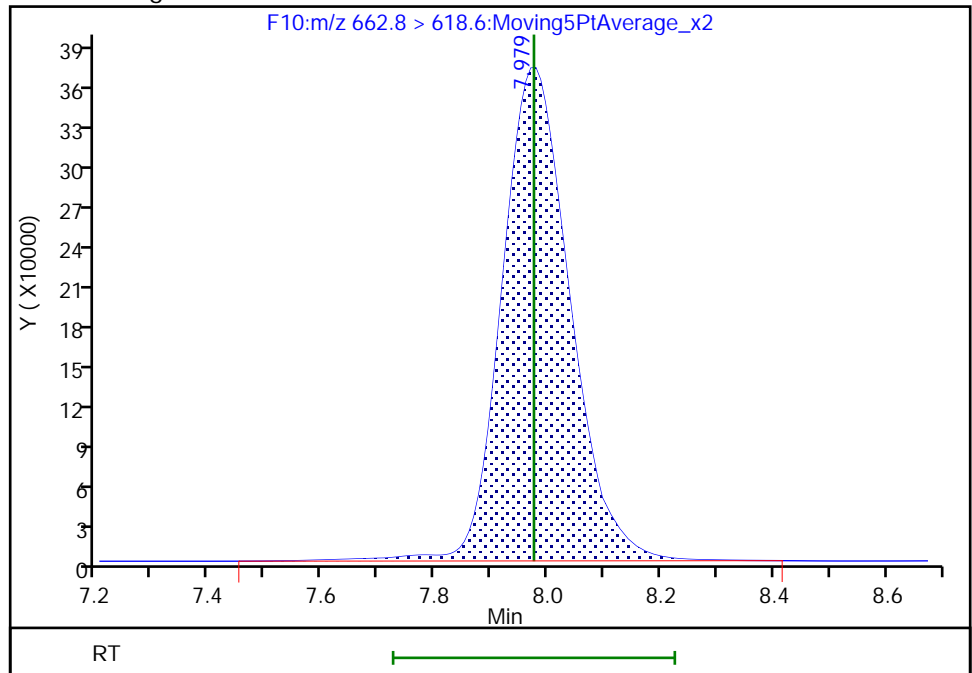
RT: 7.98
Area: 3125897
Amount: 100.4067
Amount Units: ng/ml

Processing Integration Results



RT: 7.98
Area: 3150003
Amount: 101.0299
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:13:01
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Lims ID: IC
 Client ID:
 Sample Type: IC Calib Level: 9
 Inject. Date: 17-Oct-2018 15:27:36 ALS Bottle#: 0 Worklist Smp#: 14
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-014 IC 9
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:38:37 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 16:14:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.334	2.336	-0.002	1.000	567698	56.9	114	237	
2 Perfluorobutanoic acid	212.9 > 168.9	2.338	2.338	0.0	1.002	1927671	200.2	100	787	
D 3 13C5 PFPeA	267.7 > 222.6	2.760	2.754	0.006	1.000	333076	52.6	105	1252	
4 Perfluoropentanoic acid	262.9 > 218.8	2.750	2.754	-0.004	0.996	3810569	200.9	100	6878	
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.814	0.004	1.000	259525	49.7	107	304	M
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.818	2.820	-0.002	1.000	2049258	210.4	105	49093	M
D 7 13C2 PFHxA	314.8 > 269.6	3.177	3.172	0.005	1.000	558939	49.0	98.0	1740	
8 Perfluorohexanoic acid	312.8 > 268.6	3.164	3.174	-0.010	0.996	2467003	212.7	106	4718	
D 9 13C4 PFHpA	366.9 > 321.8	3.692	3.702	-0.010	1.000	1010258	48.4	96.8	349	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.703	3.705	-0.002	1.003	4235283	214.4	107	322	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	314147	52.0	110	465	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.749	-0.001	1.000	2051663	202.8	101	34920	
D 13 M2-6:2 FTS	428.6 > 408.6	4.317	4.325	-0.008	1.000	127432	68.4	144	885	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.330	0.0	1.003	432543	163.8	81.9	6497	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.355	4.370	-0.015	1.000	809948	50.8		102	1160	
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.374	4.374	0.0	1.004	3197469	199.4		99.7	1643	M
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		849547	50.0			4870	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.411	4.412	-0.001	0.854	1118747	208.3		104	1067	
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1071206	49.8		99.6	708	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	4567285	193.9		97.0	64334	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.160	-0.006	0.997	1356719	233.3		117	10716	
D 22 13C4 PFOS										
502.8 > 79.8	5.168	5.161	0.007	1.000	268942	50.3		105	1054	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.891	-0.009	1.000	288539	57.2		119	897	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.882	5.896	-0.014	1.000	854174	175.8		87.9	4652	
D 26 13C2 PFDA										
514.9 > 469.5	5.902	5.918	-0.016	1.000	1045034	47.1		94.3	1860	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.921	0.005	1.004	4318588	204.7		102	775	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.277	6.275	0.002	1.000	360409	63.6		127	1215	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.000	1527415	195.1		97.6	1148	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	254374	52.9		106	1730	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	965610	197.2		98.6	2707	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.668	0.002	1.291	1219877	207.3		104	12815	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.682	-0.012	1.000	1088312	47.2		94.3	2245	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.688	6.682	0.006	1.003	4519201	202.4		101	3007	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	584014	56.7		113	5978	
34 Perfluorooctanesulfonamide										M
497.8 > 77.8	6.959	6.957	0.002	1.000	2045786	207.0		103	3392	M
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	5607453	195.3		97.7	3864	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	1671991	57.3		115	1771	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.970	7.975	-0.005	0.936	5890497	194.3		97.2	3132	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1526788	57.0		114	760	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.521	-0.007	1.000	5895673	198.1		99.0	4755	
712.8 > 168.8	8.514	8.521	-0.007	1.000	1217053		4.84(0.00-0.00)	99.0	428	
712.8 > 218.8	8.514	8.521	-0.007	1.000	696621		8.46(0.00-0.00)	99.0	139	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L6_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Injection Date: 17-Oct-2018 15:27:36

Instrument ID: LC410

Lims ID: IC

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 14

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

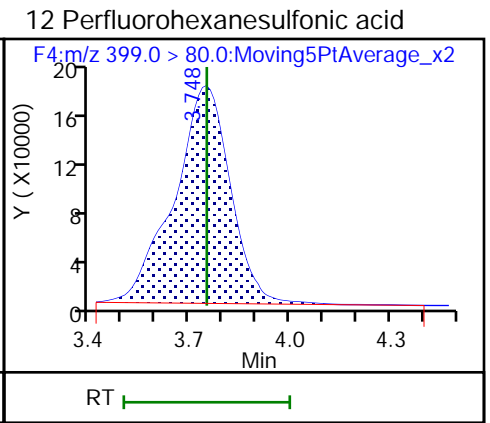
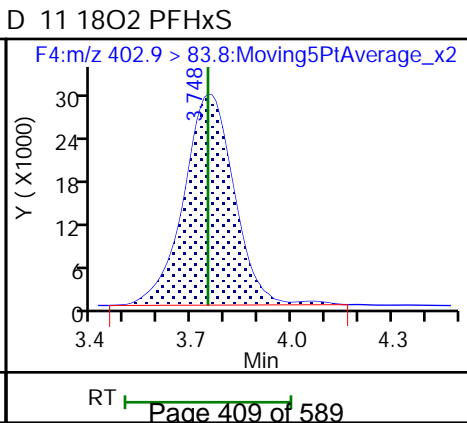
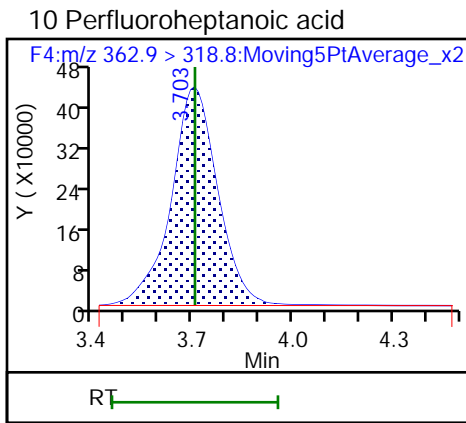
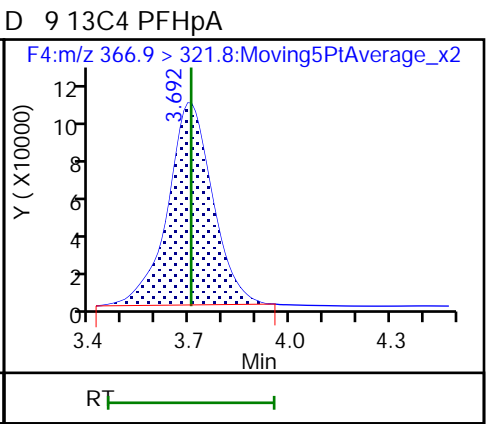
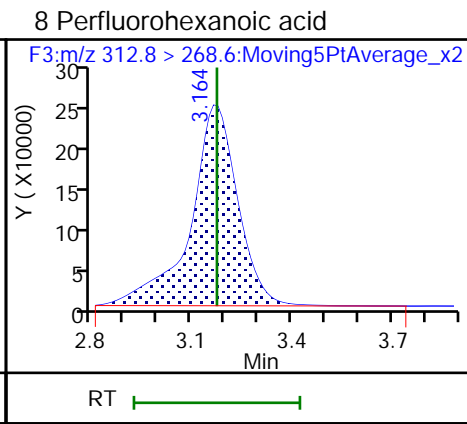
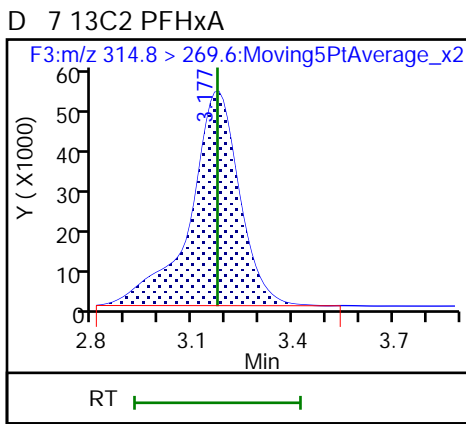
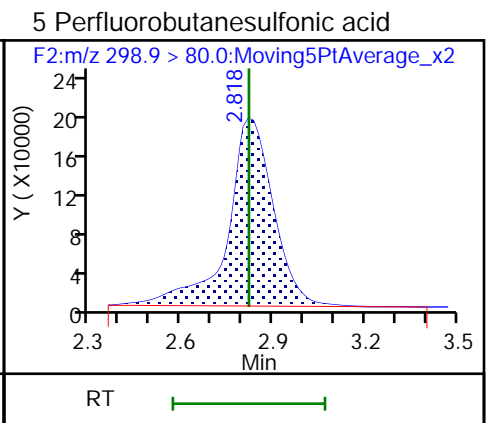
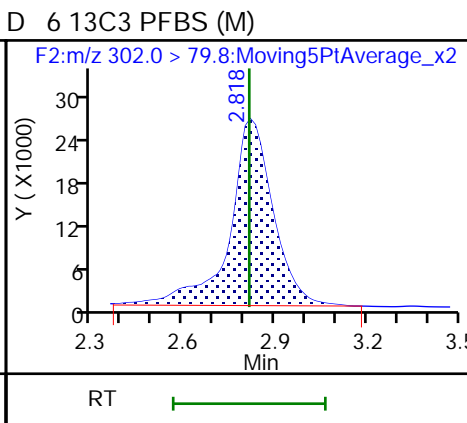
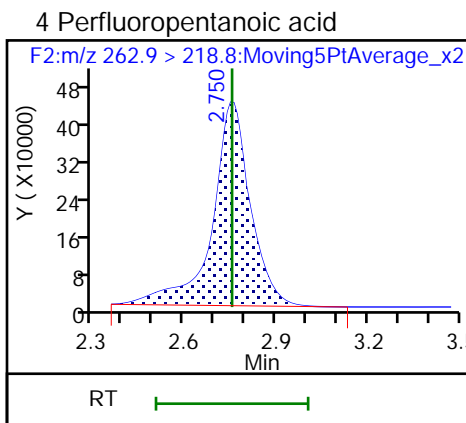
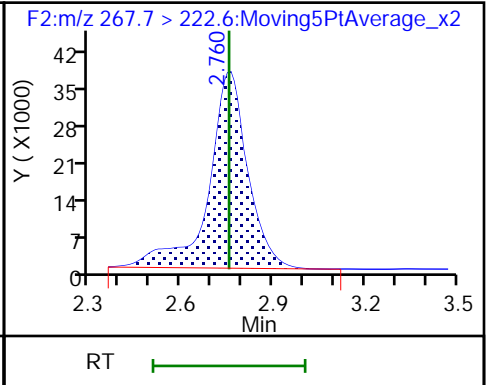
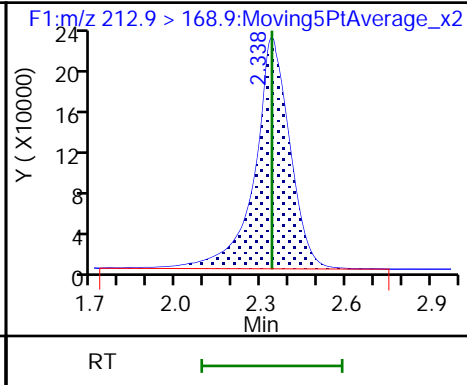
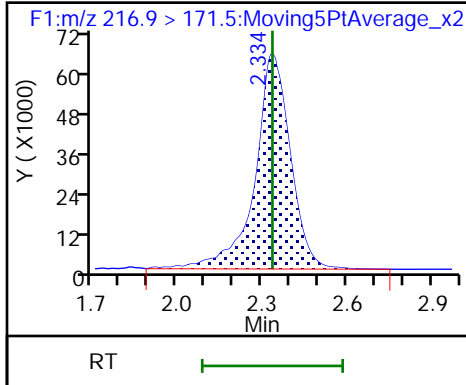
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

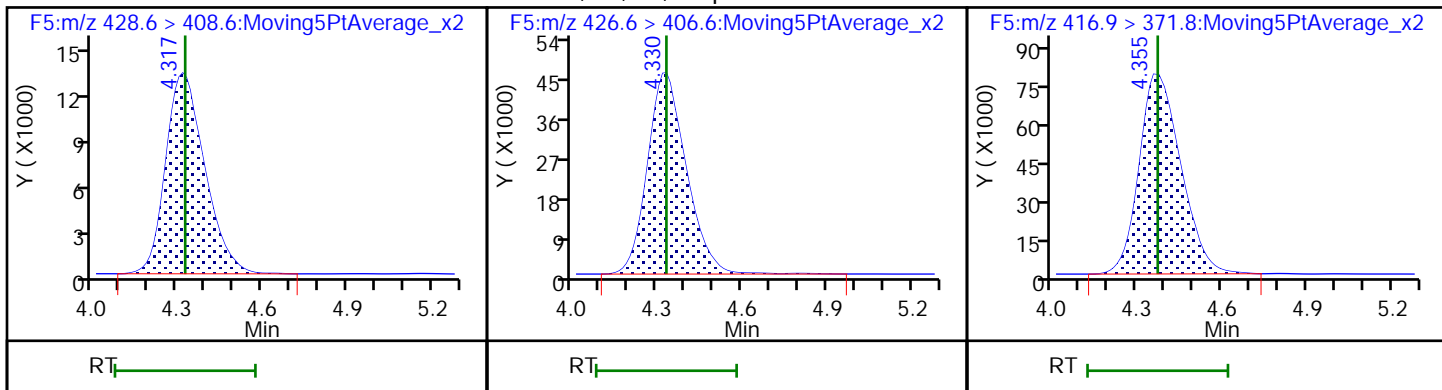
2 Perfluorobutanoic acid

D 3 13C5 PFPeA



D 13 M2-6:2 FTS

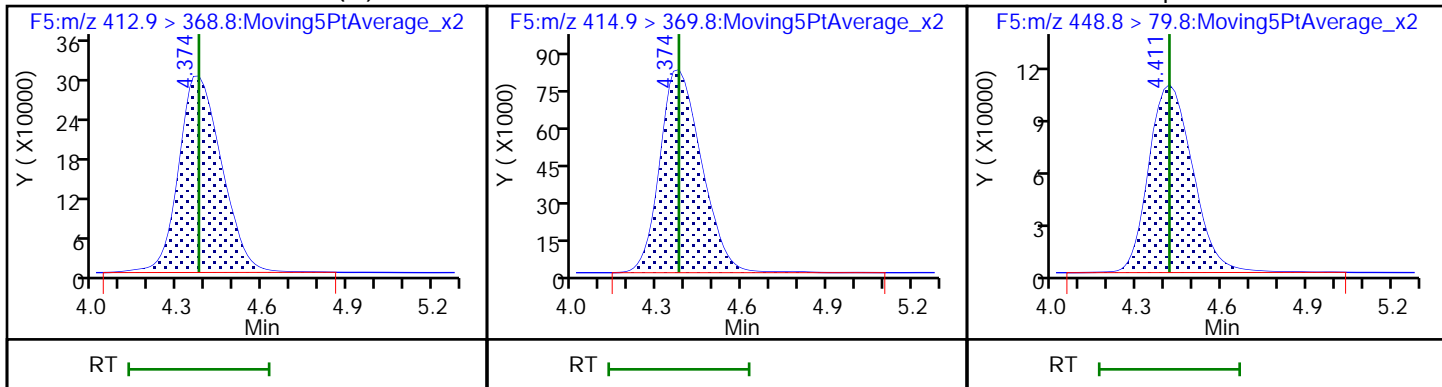
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid (M)

* 15 13C2 PFOA

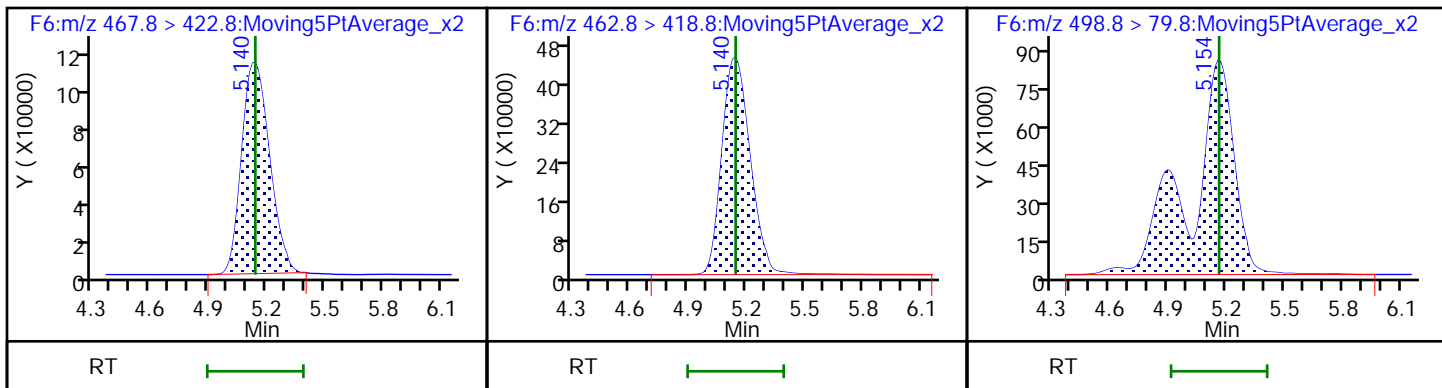
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

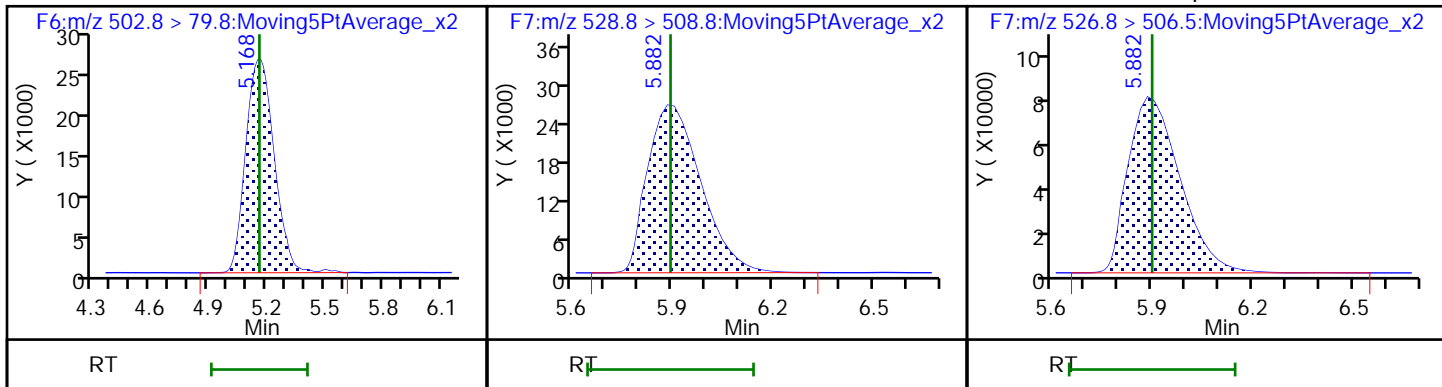
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

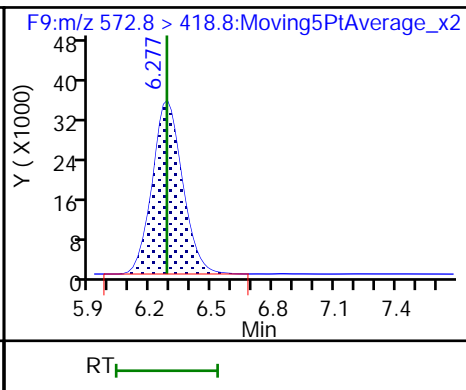
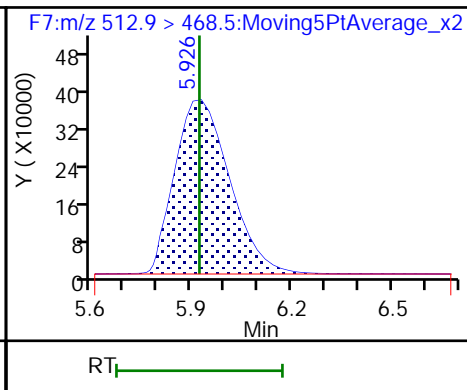
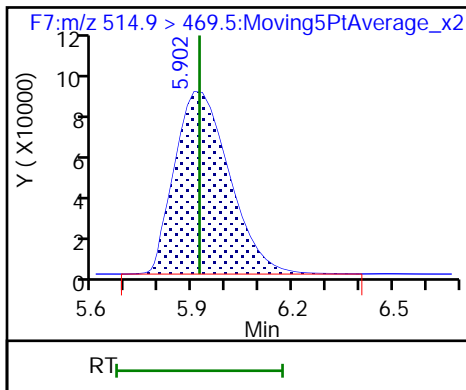
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

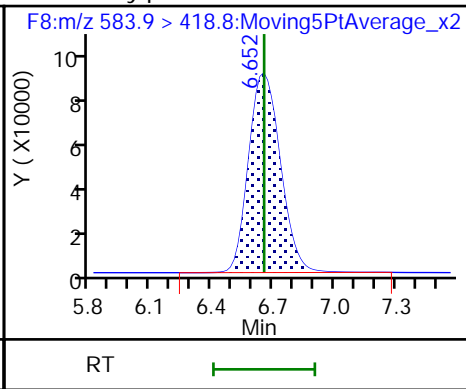
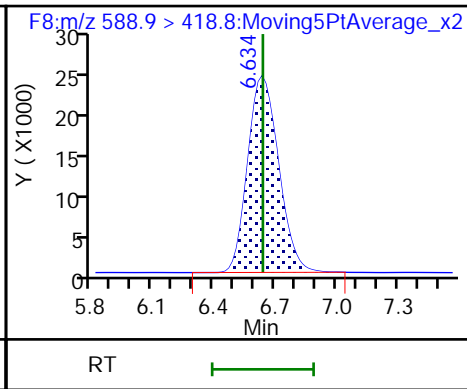
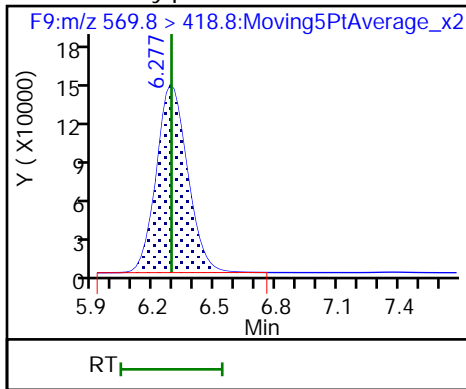
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

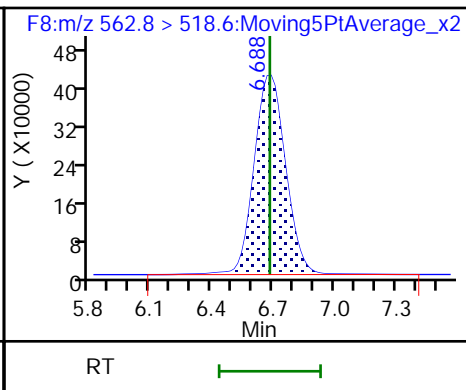
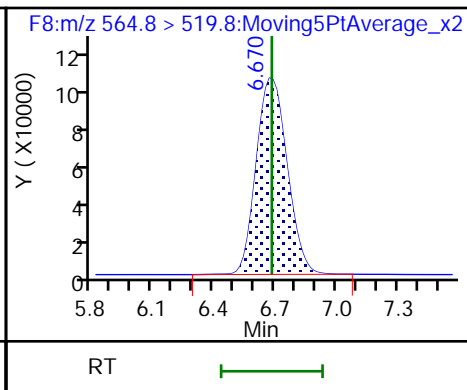
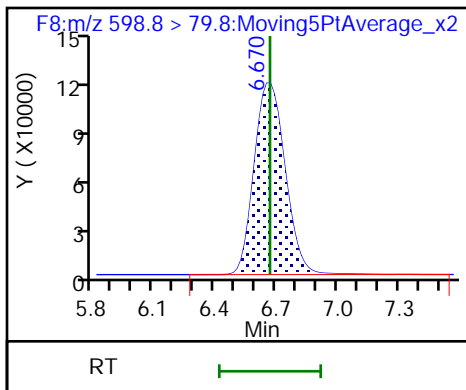
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

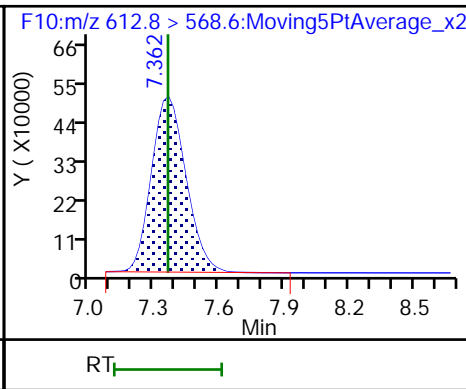
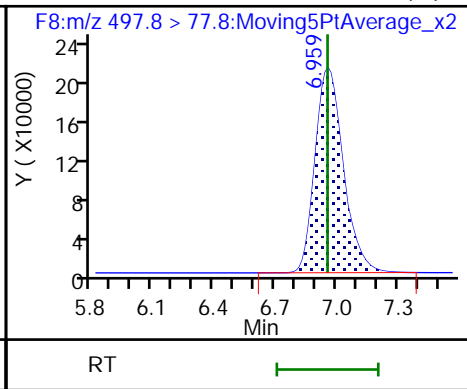
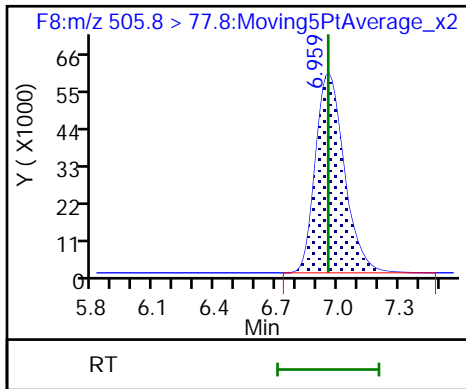
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide (M)

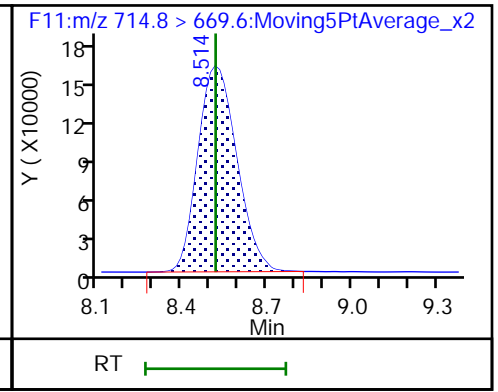
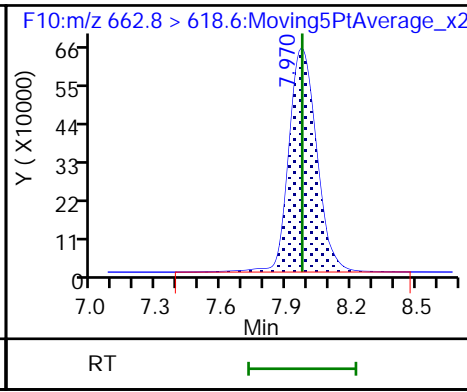
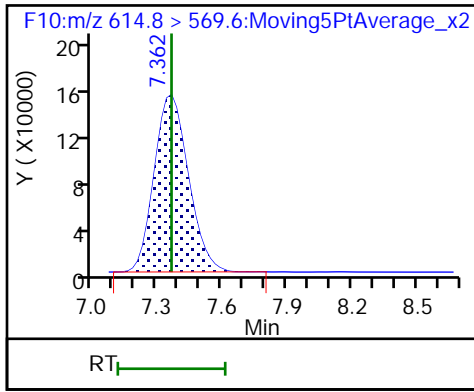
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid

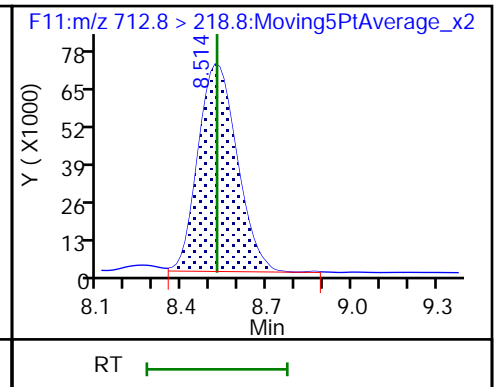
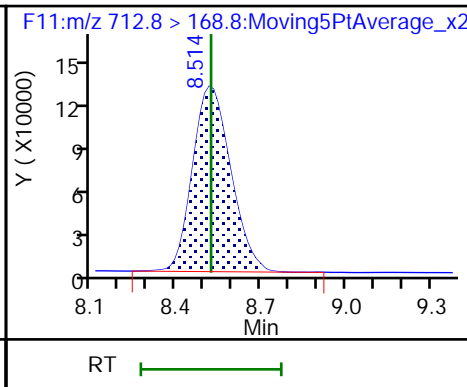
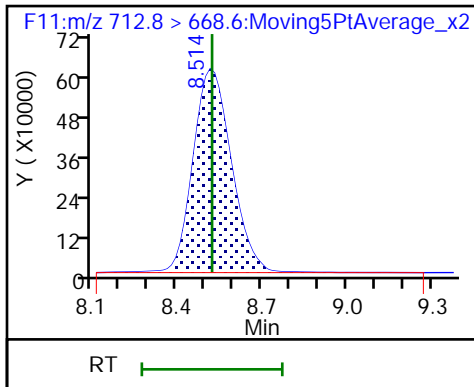
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid



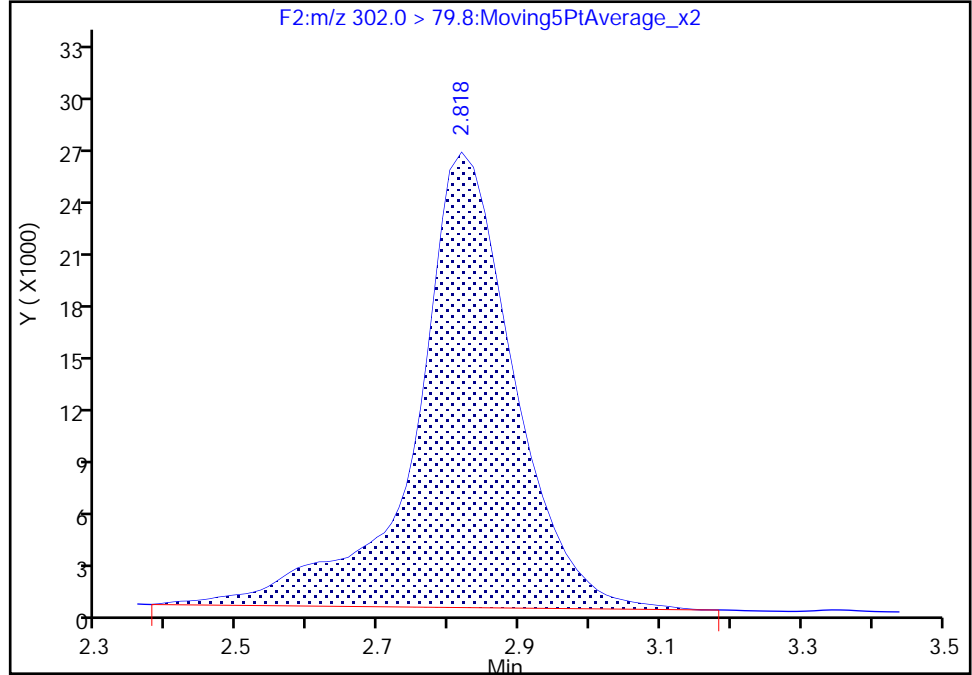
TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
Injection Date: 17-Oct-2018 15:27:36 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 6 13C3 PFBS, CAS: STL02337
Signal: 1

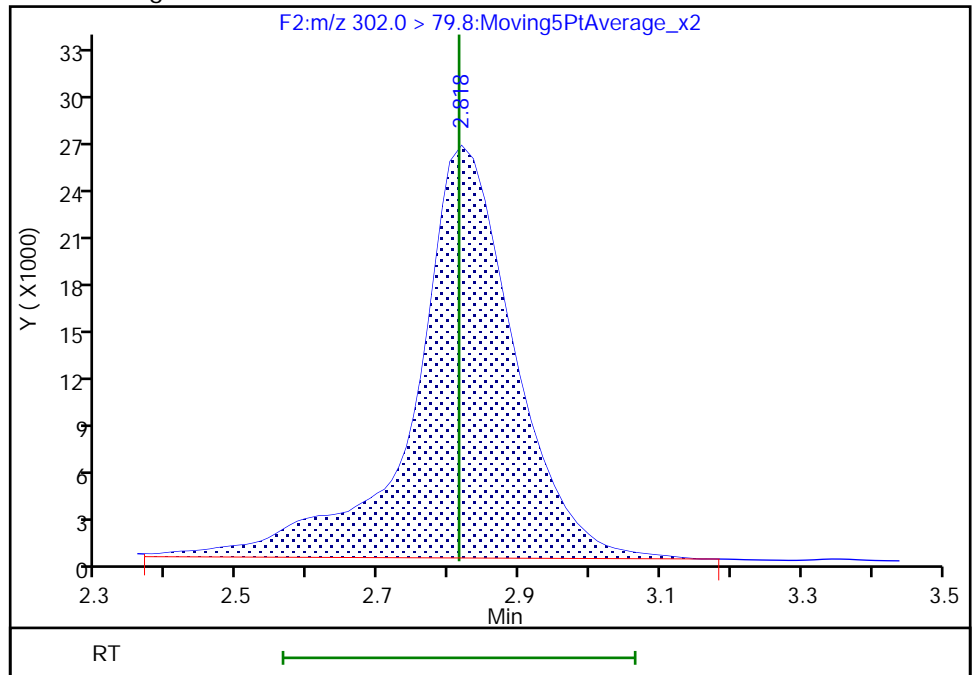
RT: 2.82
Area: 255926
Amount: 49.071183
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 259525
Amount: 49.679338
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

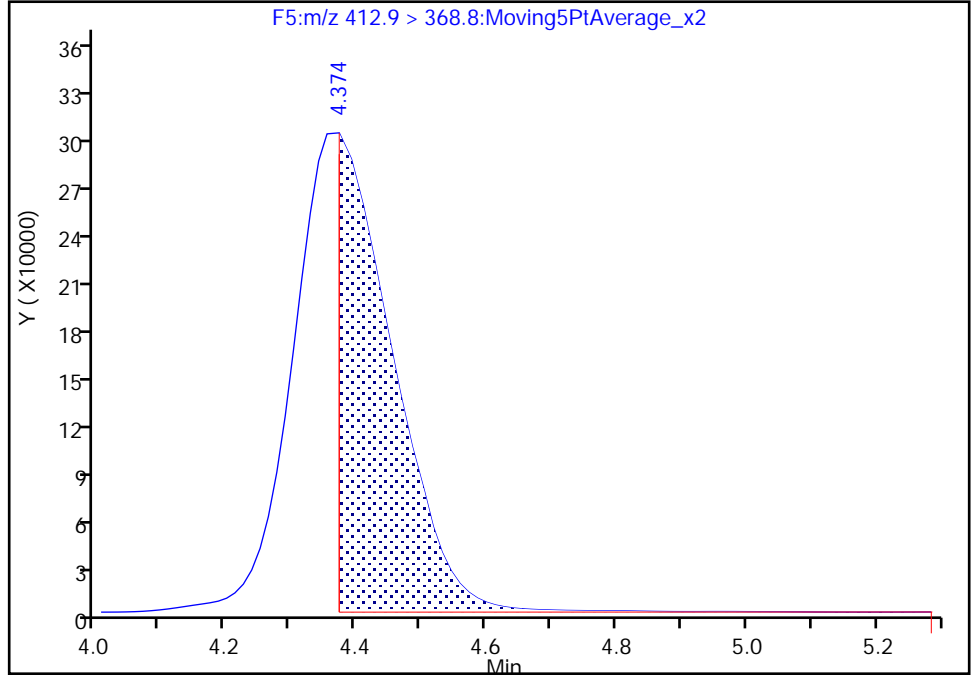
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
Injection Date: 17-Oct-2018 15:27:36 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

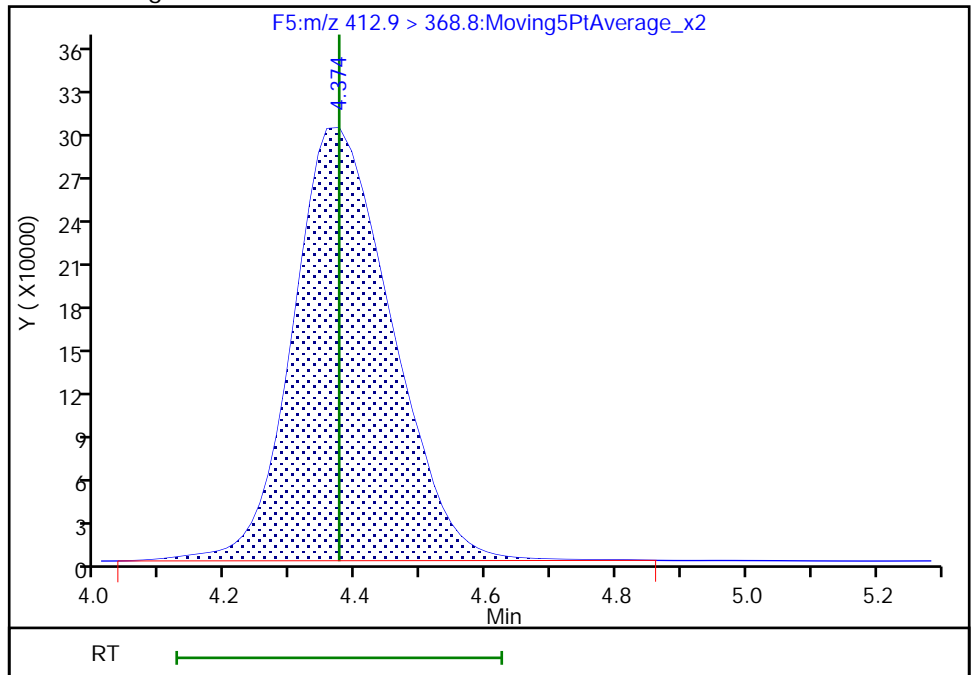
RT: 4.37
Area: 1732445
Amount: 113.8144
Amount Units: ng/ml

Processing Integration Results



RT: 4.37
Area: 3197469
Amount: 199.3985
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:14:27
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington

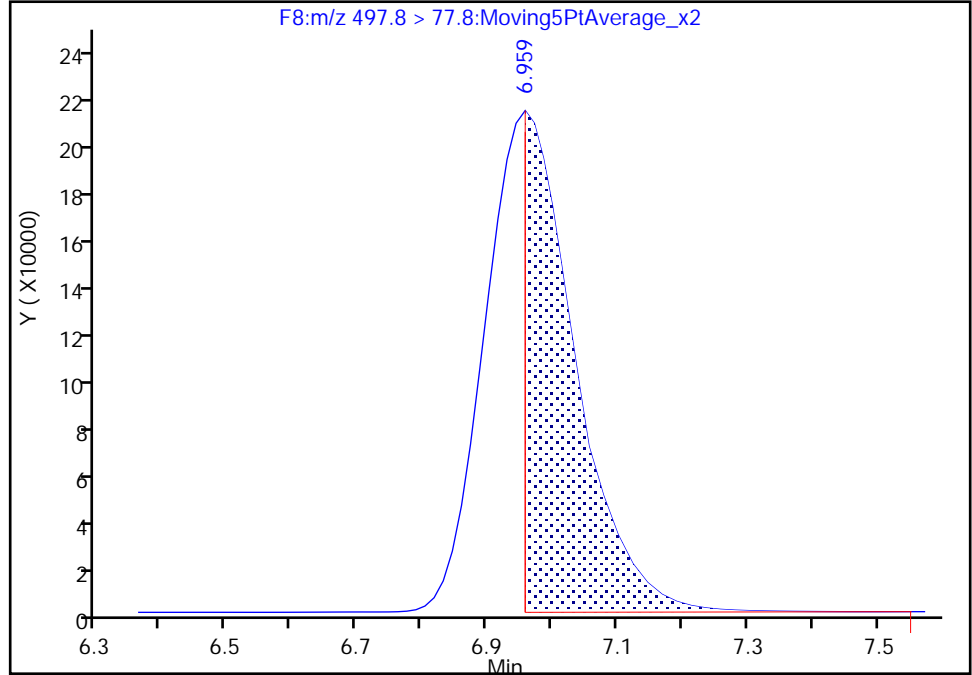
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Injection Date: 17-Oct-2018 15:27:36 Instrument ID: LC410
Lims ID: IC
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

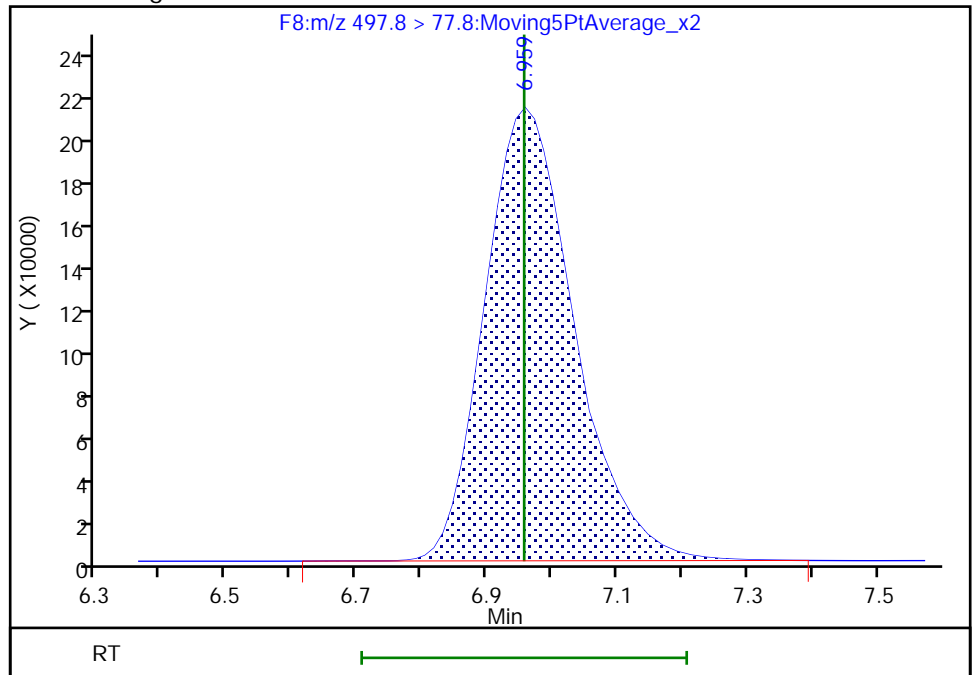
RT: 6.96
Area: 1141841
Amount: 121.7146
Amount Units: ng/ml

Processing Integration Results



RT: 6.96
Area: 2045786
Amount: 206.9903
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:14:42
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 415 of 589

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: ICV 200-135376/16 Calibration Date: 10/17/2018 15:59
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF101718A16.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L1ID		0.8001		18700	20000	-6.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	2.848	2.328		16400	20000	-18.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.745	1.567		15900	17700	-10.2	40.0
Perfluorohexanoic acid (PFHxA)	AveID	1.038	0.9012		17400	20000	-13.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9775	0.9499		19400	20000	-2.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	L1ID		1.348		15900	18200	-12.7	40.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.9845	0.9456		18200	19000	-4.0	40.0
Perfluorooctanoic acid (PFOA)	AveID	0.9899	0.9252		18700	20000	-6.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9547	0.8618		17100	19000	-9.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.099	0.8530		15500	20000	-22.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.034	1.047		18700	18500	1.3	40.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.8068	0.7391		17600	19200	-8.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.009	0.8931		17700	20000	-11.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.086	0.9801		18100	20000	-9.7	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9627	0.9103		18900	20000	-5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	1.046	0.9384		17300	19300	-10.3	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.026	0.9439		18400	20000	-8.0	40.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.8462	0.8302		19600	20000	-1.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8584	0.8355		19500	20000	-2.7	40.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.9775	0.9662		19800	20000	-1.2	540.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.9748	0.8246		16900	20000	-15.4	40.0
13C4 PFBA	Ave	0.5875	0.7063		60100	50000	20.2	50.0
13C5 PFPeA	Ave	0.3725	0.4748		63700	50000	27.5	50.0
13C3 PFBS	Ave	0.3075	0.3652		55200	46500	18.8	50.0
13C2 PFHxA	Ave	0.6710	0.7948		59200	50000	18.4	50.0
13C4 PFHpA	Ave	1.229	1.396		56800	50000	13.6	50.0
18O2 PFHxS	Ave	0.3555	0.4094		54500	47300	15.2	50.0
M2-6:2 FTS	Ave	0.1097	0.1339		58000	47500	22.1	50.0
13C4 PFOA	Ave	0.9383	1.093		58300	50000	16.5	50.0
13C5 PFNA	Ave	1.265	1.413		55800	50000	11.7	50.0
13C4 PFOS	Ave	0.3148	0.3626		55100	47800	15.2	50.0
M2-8:2 FTS	Ave	0.2971	0.3388		54600	47900	14.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: ICV 200-135376/16 Calibration Date: 10/17/2018 15:59
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF101718A16.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFDA	Ave	1.305	1.465		56100	50000	12.3	50.0
d3-NMeFOSAA	Ave	0.3333	0.3876		58200	50000	16.3	50.0
d5-NEtFOSAA	Ave	0.2828	0.3191		56400	50000	12.8	50.0
13C2 PFUnA	Ave	1.358	1.605		59100	50000	18.2	50.0
13C8 FOSA	Ave	0.6063	0.6836		56400	50000	12.8	50.0
13C2 PFDoA	Ave	1.718	1.970		57300	50000	14.6	50.0
13C2 PFTeDA	Ave	1.577	1.776		56300	50000	12.6	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A16.d
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 17-Oct-2018 15:59:24 ALS Bottle#: 0 Worklist Smp#: 16
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0032684-016 ICV
 Misc. Info.: PFAS21 101718A ICAL
 Operator ID: BC Instrument ID: LC410
 Sublist:

Method: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 17-Oct-2018 16:40:38 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: XAWRK002

First Level Reviewer: chirgwinb Date: 17-Oct-2018 16:25:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.326	2.336	-0.010	1.000	721296	60.1	120	542	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.334	2.338	-0.004	1.003	230841	18.7		519		M
D 3 13C5 PFPeA	267.7 > 222.6	2.750	2.754	-0.004	1.000	484841	63.7	127	5240	
4 Perfluoropentanoic acid	262.9 > 218.8	2.750	2.754	-0.004	1.000	451525	16.4		2479	
D 6 13C3 PFBS	302.0 > 79.8	2.818	2.818	0.0	1.000	346885	55.2	119	1450	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.818	2.820	-0.002	1.000	206971	15.9		436	
D 7 13C2 PFHxA	314.8 > 269.6	3.177	3.172	0.005	1.000	811722	59.2	118	4345	
8 Perfluorohexanoic acid	312.8 > 268.6	3.177	3.174	0.003	1.000	292595	17.4		2111	
D 9 13C4 PFHpA	366.9 > 321.8	3.703	3.702	0.001	1.000	1425501	56.8	114	452	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.703	3.705	-0.002	1.000	541612	19.4		1351	
D 11 18O2 PFHxS	402.9 > 83.8	3.748	3.747	0.001	1.000	395530	54.5	115	925	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.737	3.749	-0.012	0.997	205608	15.9		450	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.325	0.005	1.000	129922	58.0	122	1444	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.330	0.0	1.000	181418	18.2		1145	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.370	0.004	1.000	1116500	58.3		117	1029	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.374	0.0	1.000	413187	18.7			1355	
* 15 13C2 PFOA										
414.9 > 369.8	4.374	4.374	0.0		1021250	50.0			2336	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.412	4.412	0.0	0.856	121251	17.1			322	M
D 20 13C5 PFNA										
467.8 > 422.8	5.140	5.140	0.0	1.000	1443301	55.8		112	963	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.142	-0.002	1.000	492429	15.5			837	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.160	-0.006	1.000	143520	18.7			2815	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.161	-0.007	1.000	353980	55.1		115	617	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.891	-0.009	1.000	331443	54.6		114	1537	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.882	5.896	-0.014	1.000	98191	17.6			688	
D 26 13C2 PFDA										
514.9 > 469.5	5.926	5.918	0.008	1.000	1496238	56.1		112	1801	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.926	5.921	0.005	1.000	534507	17.7			951	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.275	-0.016	1.000	395879	58.2		116	633	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.277	6.283	-0.006	1.003	155197	18.1			279	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.638	-0.004	1.000	325908	56.4		113	1388	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.652	6.654	-0.002	1.003	118672	18.9			1456	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.670	6.668	0.002	1.294	134124	17.3			1492	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.682	-0.012	1.000	1639572	59.1		118	1928	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.682	-0.012	1.000	619014	18.4			1239	
D 35 13C8 FOSA										
505.8 > 77.8	6.959	6.955	0.004	1.000	698170	56.4		113	3566	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.959	6.957	0.002	1.000	231851	19.6			2070	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.359	0.003	1.000	672384	19.5			2963	
D 37 13C2 PFDoA										
614.8 > 569.6	7.362	7.362	0.0	1.000	2011865	57.3		115	3857	
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.970	7.975	-0.005	0.936	760270	19.8			2240	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.516	-0.002	1.000	1813525	56.3		113	752	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.514	8.521	-0.007	1.000	598153	16.9			826	
712.8 > 168.8	8.514	8.521	-0.007	1.000	125581		4.76(0.00-0.00)		663	
712.8 > 218.8	8.514	8.521	-0.007	1.000	75583		7.91(0.00-0.00)		501	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24ISICV_00002

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A16.d

Injection Date: 17-Oct-2018 15:59:24

Instrument ID: LC410

Lims ID: ICV

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 16

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

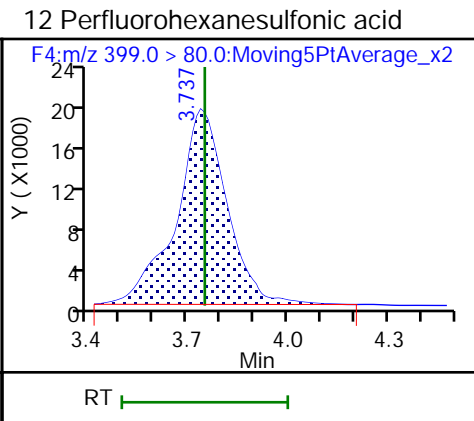
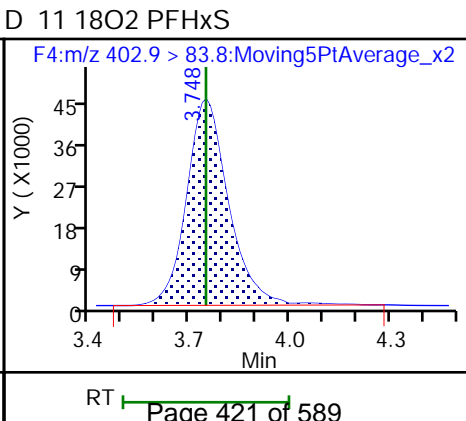
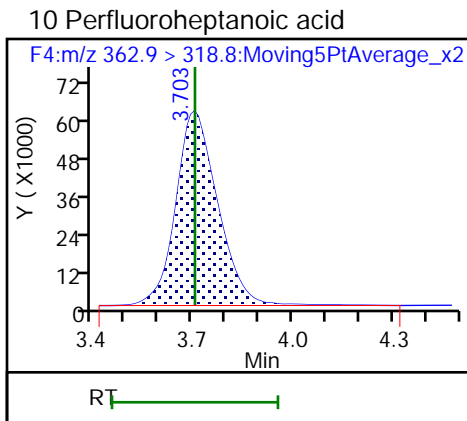
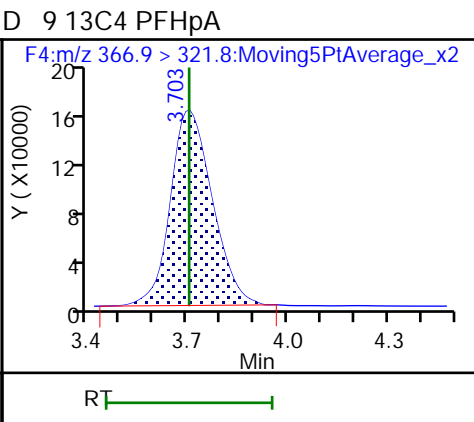
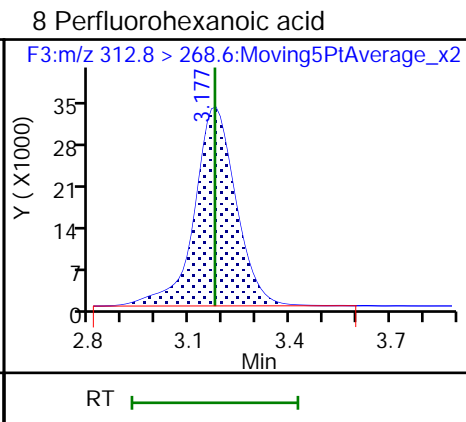
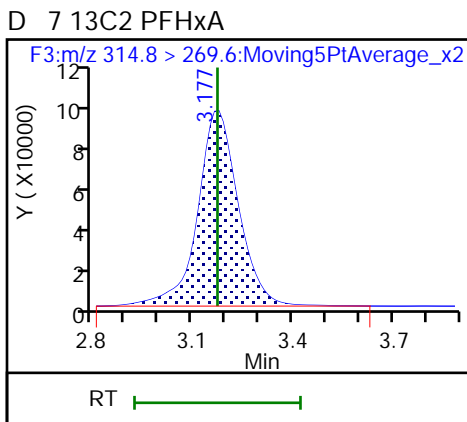
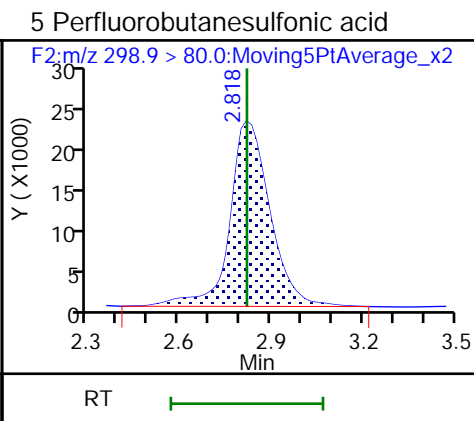
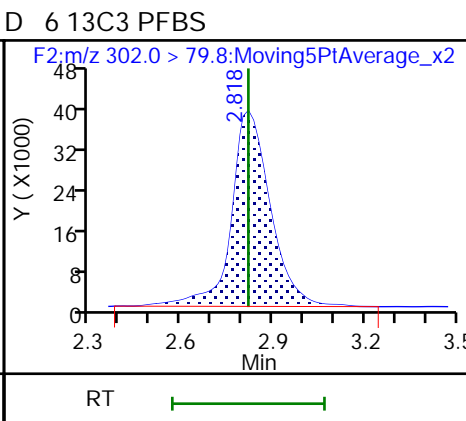
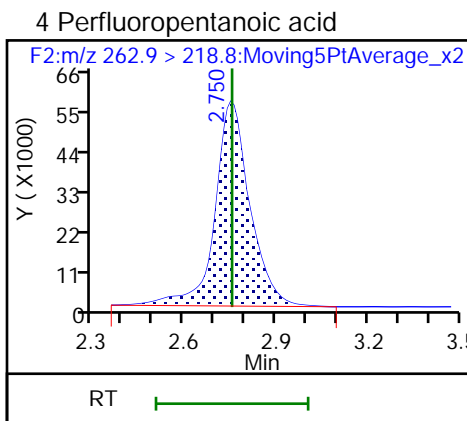
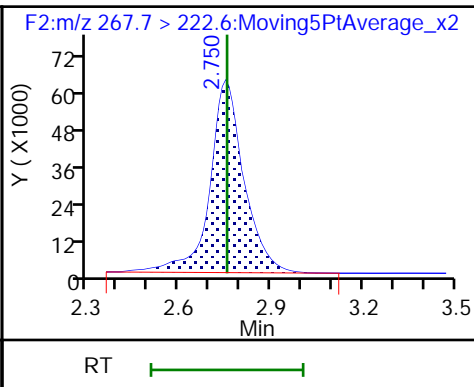
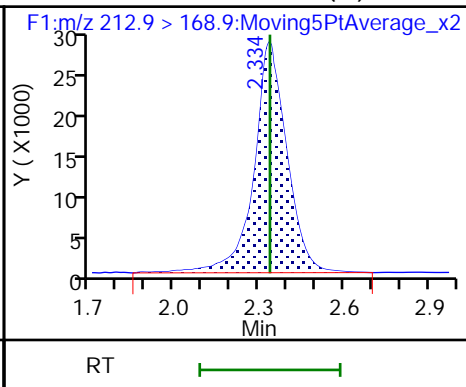
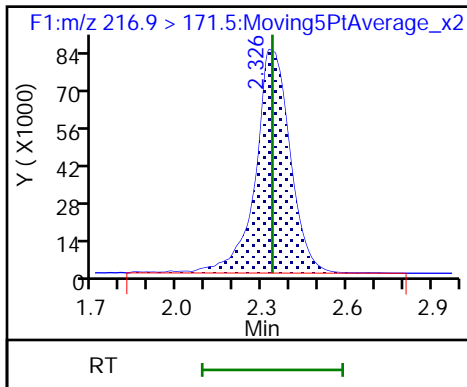
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

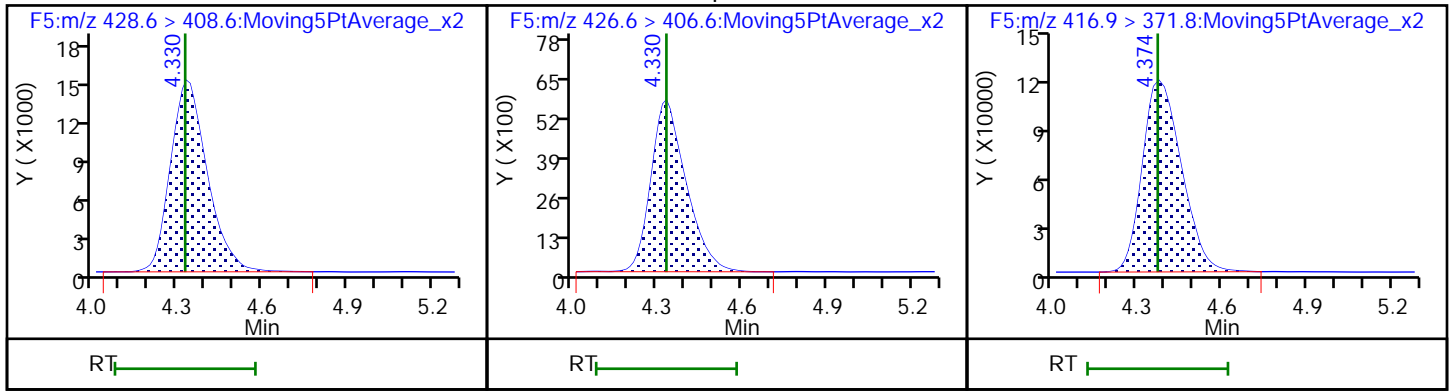
2 Perfluorobutanoic acid (M)

D 3 13C5 PFPeA



D 13 M2-6:2 FTS

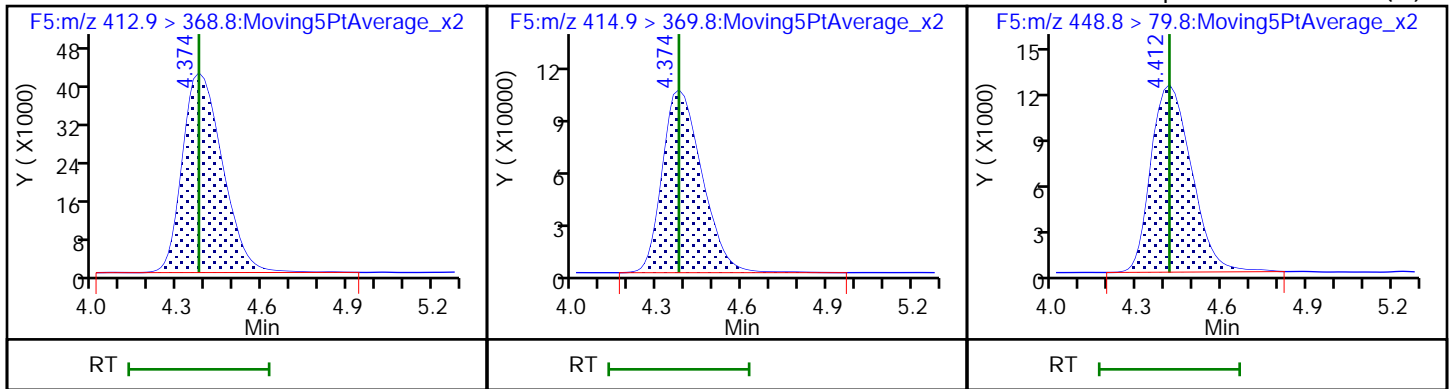
14 1H,1H,2H,2H-perfluorooctanesulfonD 17 13C4 PFOA



16 Perfluorooctanoic acid

* 15 13C2 PFOA

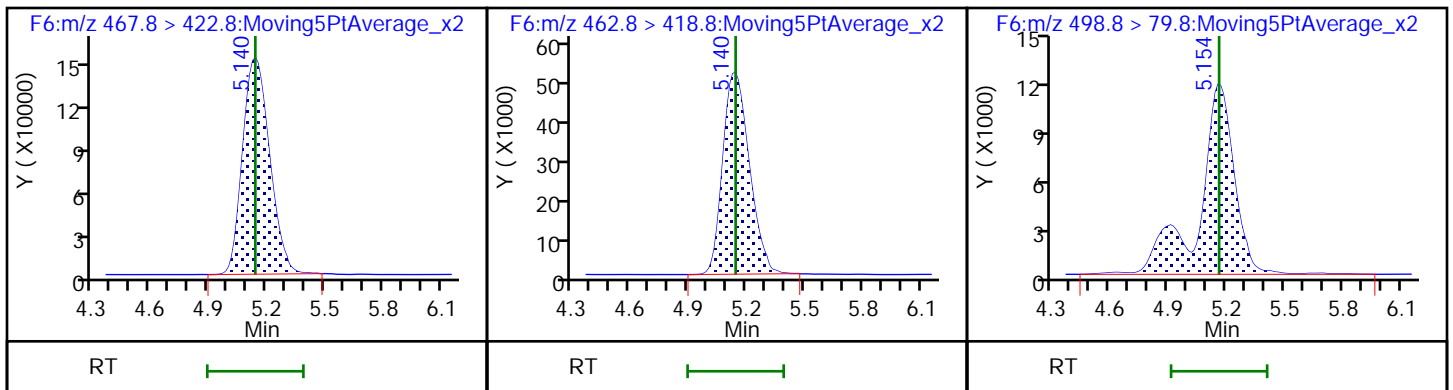
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid

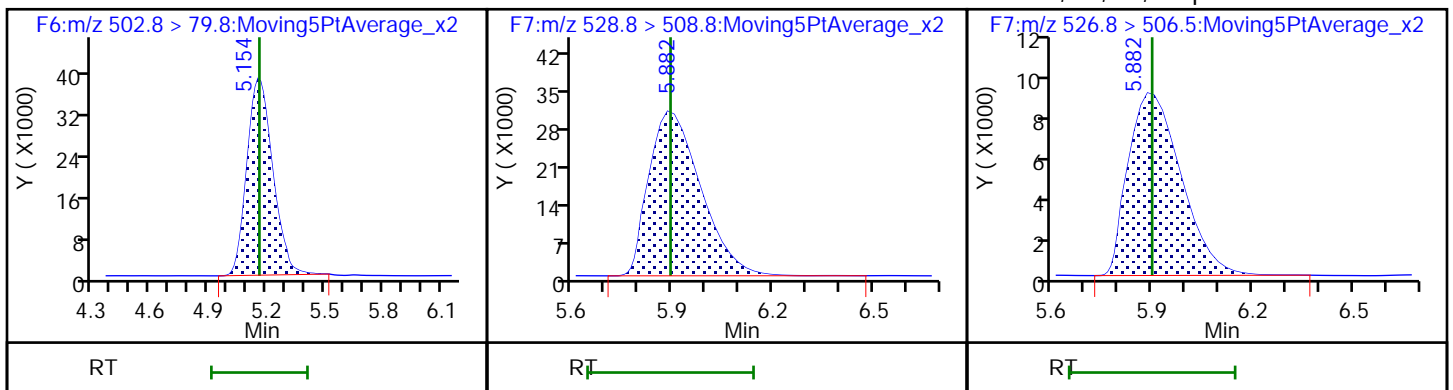
21 Perfluorooctanesulfonic acid



D 22 13C4 PFOS

D 24 M2-8:2 FTS

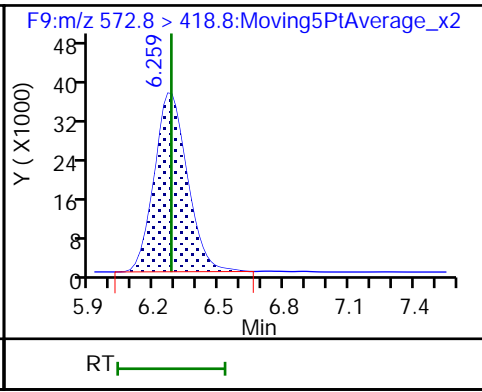
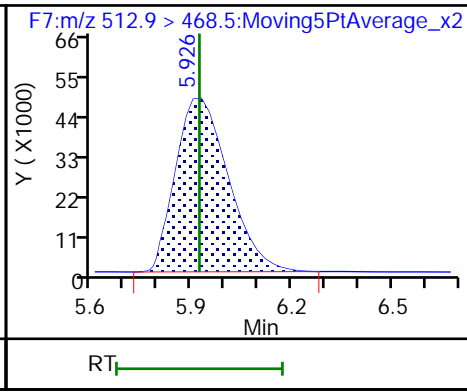
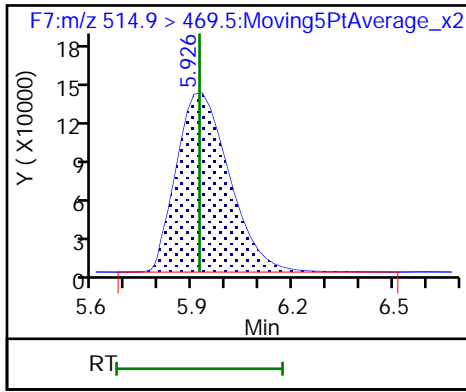
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

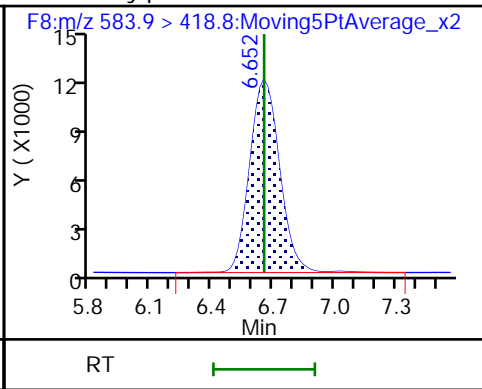
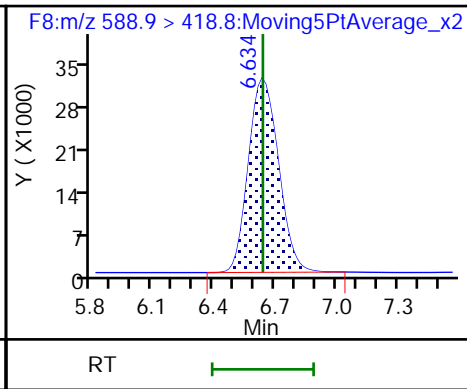
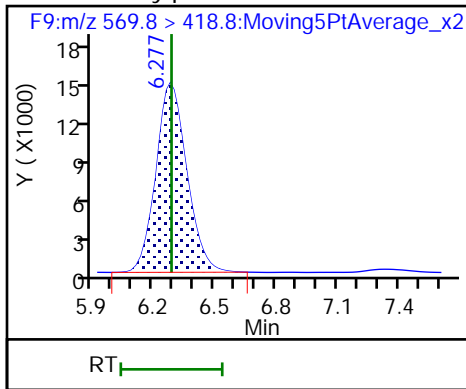
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamid

D 29 d5-NEtFOSAA

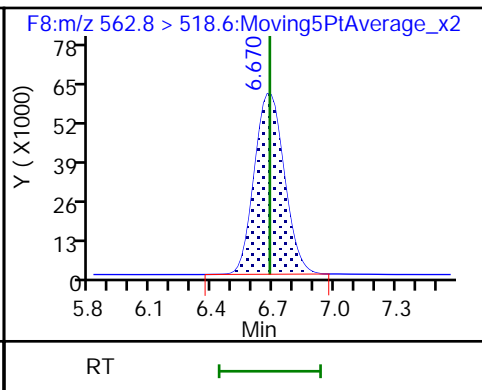
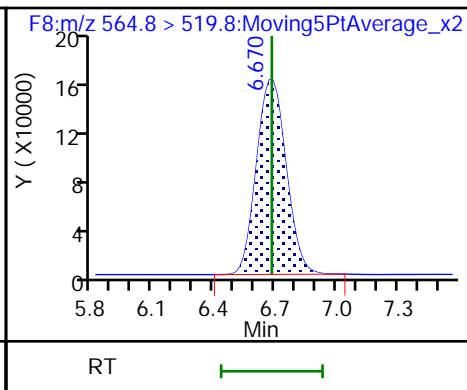
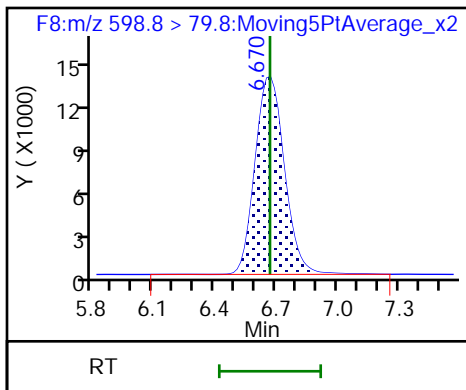
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

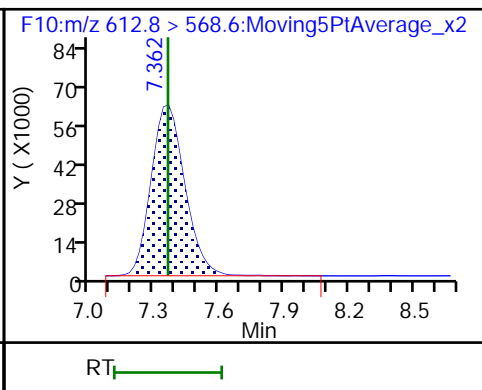
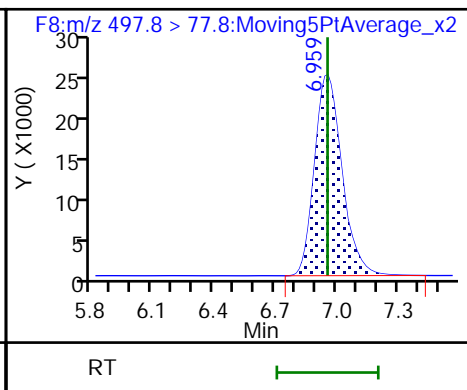
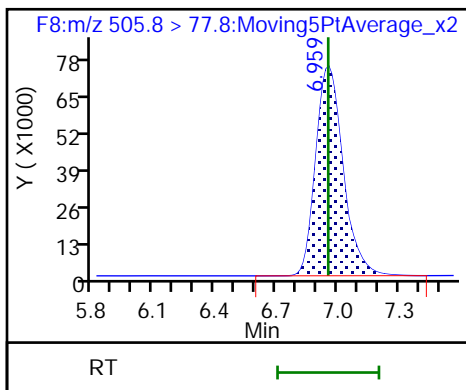
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

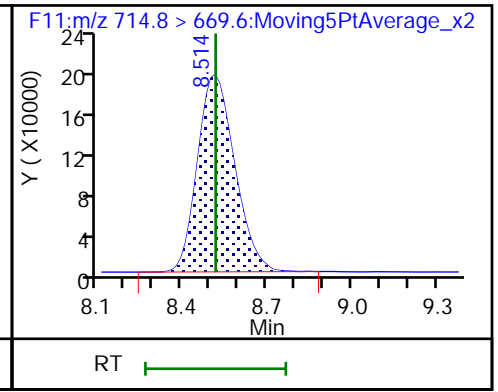
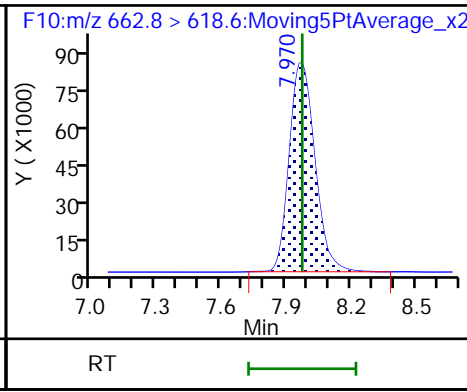
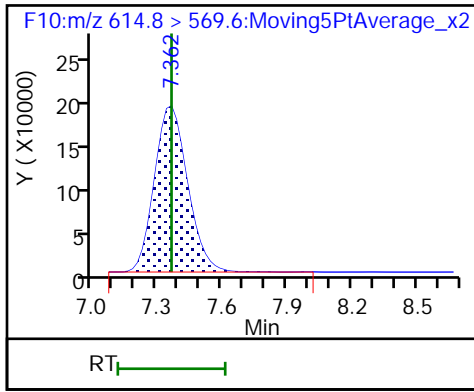
36 Perfluorododecanoic acid



D 37 13C2 PFDaA

38 Perfluorotridecanoic acid

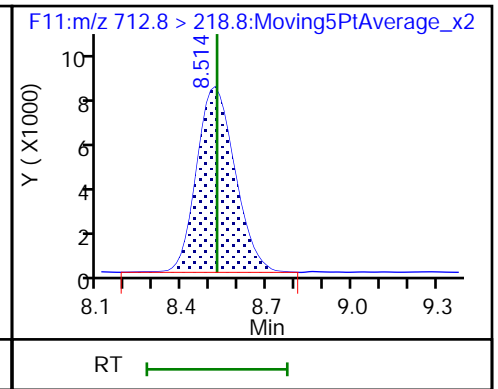
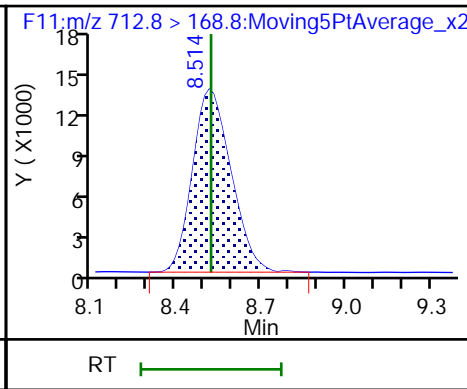
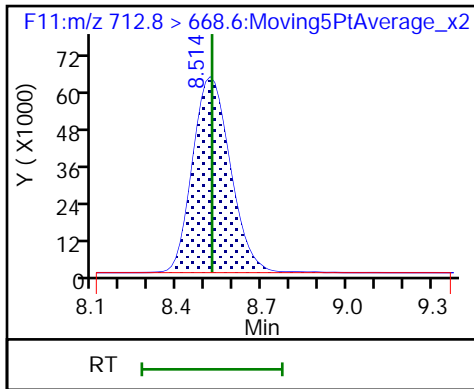
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid



TestAmerica Burlington

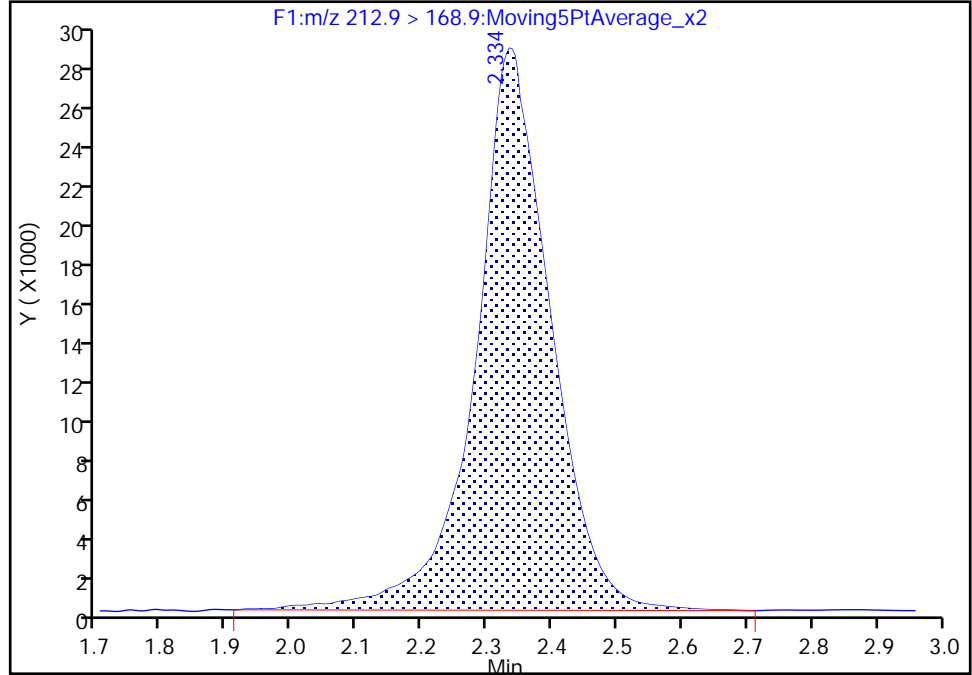
Data File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A16.d
Injection Date: 17-Oct-2018 15:59:24 Instrument ID: LC410
Lims ID: ICV
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

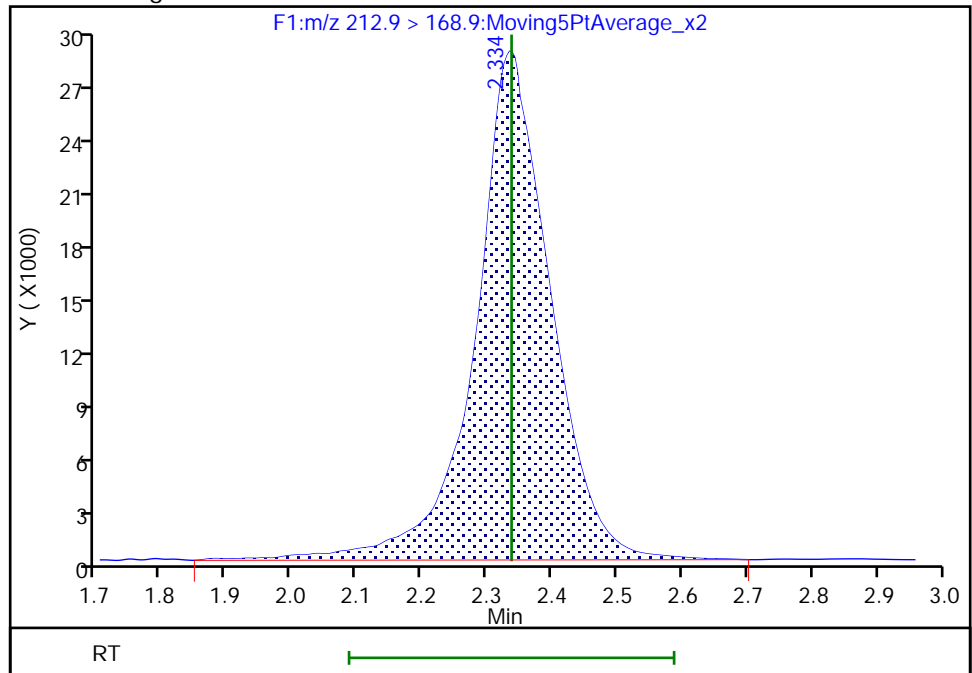
RT: 2.33
Area: 228795
Amount: 17.988882
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 230841
Amount: 18.696009
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 17-Oct-2018 16:24:57
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 425 of 589

TestAmerica Burlington

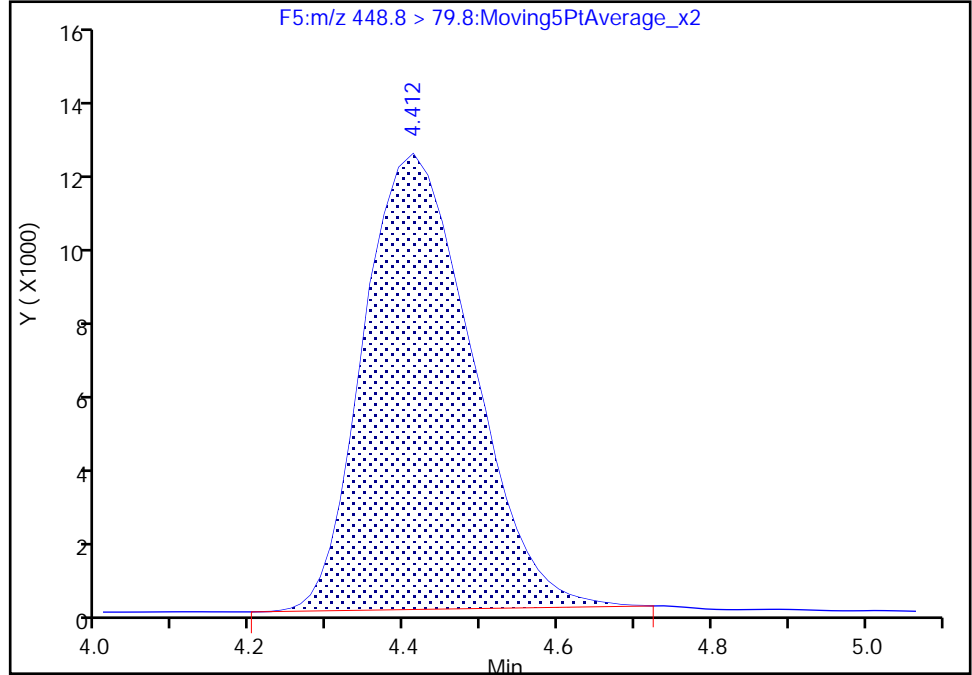
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Injection Date: 17-Oct-2018 15:59:24 Instrument ID: LC410
Lims ID: ICV
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

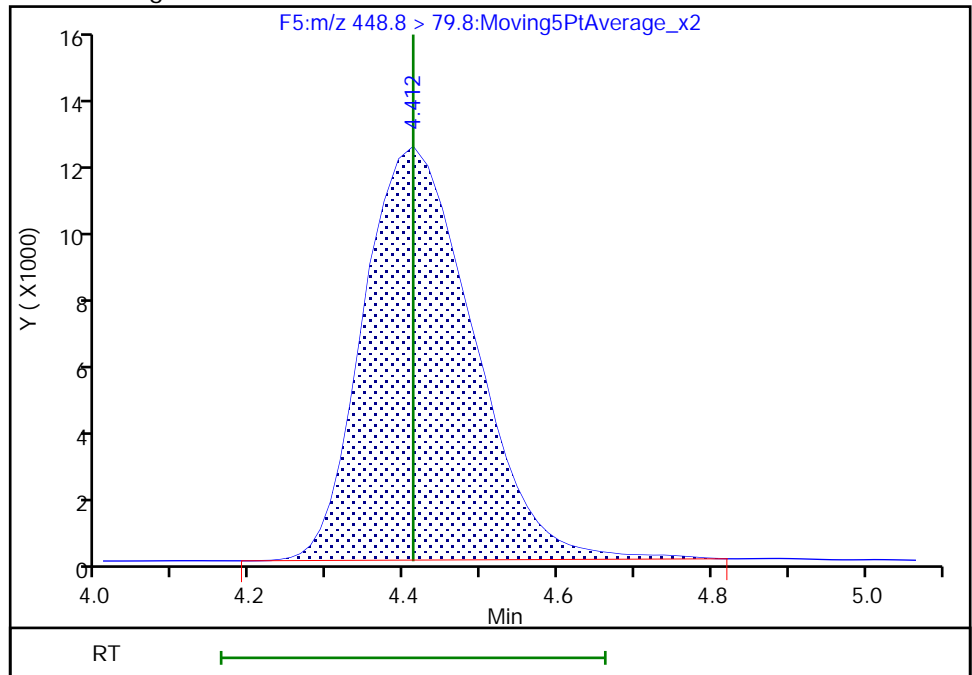
RT: 4.41
Area: 119246
Amount: 16.866382
Amount Units: ng/ml

Processing Integration Results



RT: 4.41
Area: 121251
Amount: 17.149973
Amount Units: ng/ml

Manual Integration Results



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCVIS 200-138864/6 Calibration Date: 01/07/2019 18:32
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A06.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L1ID		0.8619		20200	20000	0.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	2.848	1.998		14000	20000	-29.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.745	1.116		12800	20000	-36.1	40.0
Perfluorohexanoic acid (PFHxA)	AveID	1.038	0.9262		17900	20000	-10.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9775	1.034		21200	20000	5.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	L1ID		0.9728		12500	20000	-37.3	40.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.9845	0.9533		19400	20000	-3.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	0.9899	1.022		20700	20000	3.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9547	0.8898		18600	20000	-6.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.099	0.9174		16700	20000	-16.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.034	0.9751		18900	20000	-5.7	40.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.8068	0.8116		20100	20000	0.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.009	0.9711		19200	20000	-3.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.086	0.8681		16000	20000	-20.1	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9627	0.7591		15800	20000	-21.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	1.046	0.9651		18500	20000	-7.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.026	0.9692		18900	20000	-5.5	40.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.8462	0.9001		21300	20000	6.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8584	0.8334		19400	20000	-2.9	40.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.9775	1.046		21400	20000	7.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.9748	0.8637		17700	20000	-11.4	40.0
13C4 PFBA	Ave	0.5875	0.5747		48900	50000	-2.2	50.0
13C5 PFPeA	Ave	0.3725	0.5084		68200	50000	36.5	50.0
13C3 PFBS	Ave	0.3075	0.4158		62900	46500	35.2	50.0
13C2 PFHxA	Ave	0.6710	0.6676		49700	50000	-0.5	50.0
13C4 PFHpA	Ave	1.229	1.121		45600	50000	-8.8	50.0
18O2 PFHxS	Ave	0.3555	0.4616		61400	47300	29.8	50.0
M2-6:2 FTS	Ave	0.1097	0.1554		67300	47500	41.7	50.0
13C4 PFOA	Ave	0.9383	0.8018		42700	50000	-14.6	50.0
13C5 PFNA	Ave	1.265	1.111		43900	50000	-12.2	50.0
13C4 PFOS	Ave	0.3148	0.3934		59700	47800	25.0	50.0
M2-8:2 FTS	Ave	0.2971	0.2818		45400	47900	-5.2	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCVIS 200-138864/6 Calibration Date: 01/07/2019 18:32
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A06.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFDA	Ave	1.305	1.260		48300	50000	-3.4	50.0
d3-NMeFOSAA	Ave	0.3333	0.2471		37100	50000	-25.9	50.0
d5-NEtFOSAA	Ave	0.2828	0.2352		41600	50000	-16.8	50.0
13C2 PFUnA	Ave	1.358	1.197		44100	50000	-11.8	50.0
13C8 FOSA	Ave	0.6063	0.7356		60700	50000	21.3	50.0
13C2 PFDoA	Ave	1.718	1.428		41600	50000	-16.9	50.0
13C2 PFTeDA	Ave	1.577	1.139		36100	50000	-27.8	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A06.d
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 07-Jan-2019 18:32:10 ALS Bottle#: 0 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-006 CCVIS
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 08-Jan-2019 16:42:30 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0327
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 16:42:30
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.402	2.402	0.0	1.000	327697	48.9		97.8	211	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.402	2.402	0.0	1.000	112974	20.2		101	190	M
D 3 13C5 PFPeA										
267.7 > 222.6	2.818	2.818	0.0	1.000	289858	68.2		136	1877	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.818	2.818	0.0	1.000	231644	14.0		70.2	276	
D 6 13C3 PFBS										
302.0 > 79.8	2.900	2.900	0.0	1.000	220463	62.9		135	1029	
5 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.900	2.900	0.0	1.000	105796	12.8		63.9	401	
D 7 13C2 PFHxA										
314.8 > 269.6	3.250	3.250	0.0	1.000	380679	49.7		99.5	1304	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.250	3.250	0.0	1.000	141033	17.9		89.3	649	
D 9 13C4 PFHpA										
366.9 > 321.8	3.782	3.782	0.0	1.000	639230	45.6		91.2	1153	
D 11 18O2 PFHxS										
402.9 > 83.8	3.826	3.826	0.0	1.000	249003	61.4		130	1583	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.815	3.815	0.0	0.997	102422	12.5		62.7	119	
14 1H,1H,2H,2H-perfluorooctanesulfoni										
426.6 > 406.6	4.411	4.411	0.0	1.000	33790	19.4		96.8	564	
D 13 M2-6:2 FTS										
428.6 > 408.6	4.411	4.411	0.0	1.000	84187	67.3		142	752	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFOA										
416.9 > 371.8	4.468	4.468	0.0	1.000	457172	42.7		85.4	555	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.782	3.782	0.0	1.000	264384	21.2		106	1215	
16 Perfluorooctanoic acid										
412.9 > 368.8	4.449	4.449	0.0	0.996	186939	20.7		103	975	
* 15 13C2 PFOA										
414.9 > 369.8	4.468	4.468	0.0		570184	50.0			2310	S
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.505	4.505	0.0	0.860	79825	18.6		93.2	325	
D 22 13C4 PFOS										
502.8 > 79.8	5.236	5.236	0.0	1.000	214419	59.7		125	652	
D 20 13C5 PFNA										
467.8 > 422.8	5.222	5.222	0.0	1.000	633370	43.9		87.8	613	
19 Perfluorononanoic acid										
462.8 > 418.8	5.222	5.222	0.0	1.000	232418	16.7		83.5	713	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.250	5.250	0.0	1.003	87482	18.9		94.3	389	M
D 26 13C2 PFDA										
514.9 > 469.5	6.022	6.022	0.0	1.000	718323	48.3		96.6	2950	
D 32 13C2 PFUnA										
564.8 > 519.8	6.777	6.777	0.0	1.000	682744	44.1		88.2	4488	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.998	5.998	0.0	1.000	153921	45.4		94.8	928	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.998	5.998	0.0	1.000	52162	20.1		101	409	
25 Perfluorodecanoic acid										
512.9 > 468.5	6.022	6.022	0.0	1.000	279025	19.2		96.2	741	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.367	6.367	0.0	1.000	140875	37.1		74.1	1001	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.367	6.367	0.0	1.000	48917	16.0		79.9	58.9	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.734	6.734	0.0	1.000	134107	41.6		83.2	893	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.762	6.762	0.0	1.004	40722	15.8		78.9	46.3	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.762	6.762	0.0	1.292	86586	18.5		92.3	1743	M
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.777	6.777	0.0	1.000	264679	18.9		94.5	2791	
D 35 13C8 FOSA										
505.8 > 77.8	6.945	6.945	0.0	1.000	419446	60.7		121	3488	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.959	6.959	0.0	1.002	151016	21.3		106	1785	
D 37 13C2 PFDoA										
614.8 > 569.6	7.474	7.474	0.0	1.000	814332	41.6		83.1	6210	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluorododecanoic acid	612.8 > 568.6	7.474	7.474	0.0	1.000	271467	19.4	97.1	1185	
38 Perfluorotridecanoic acid	662.8 > 618.6	8.097	8.097	0.0	0.933	271594	21.4	107	1667	
D 40 13C2 PFTeDA	714.8 > 669.6	8.681	8.681	0.0	1.000	649321	36.1	72.2	901	
39 Perfluorotetradecanoic acid	712.8 > 668.6	8.666	8.666	0.0	0.998	224323	17.7	Target=1.00	88.6	1668
	712.8 > 168.8	8.697	8.666	0.031	1.002	46312		4.84(0.90-1.10)		273
	712.8 > 218.8	8.666	8.666	0.0	0.998	30213		7.42(0.90-1.10)		252

QC Flag Legend

Processing Flags

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L4_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A06.d

Injection Date: 07-Jan-2019 18:32:10

Instrument ID: LC410

Lims ID: CCVIS

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

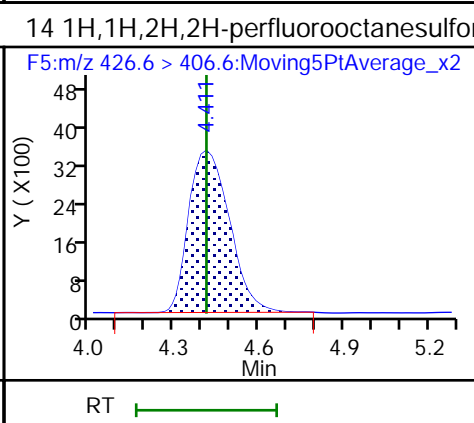
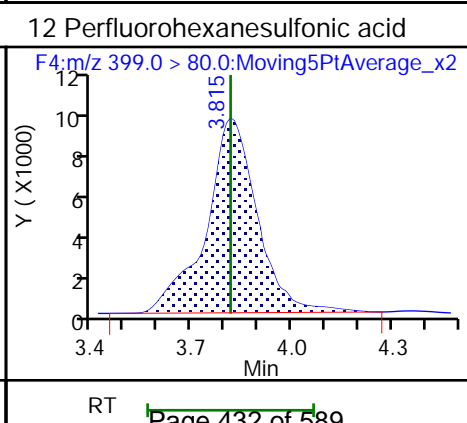
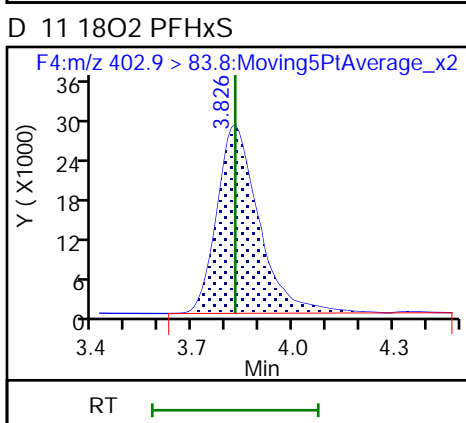
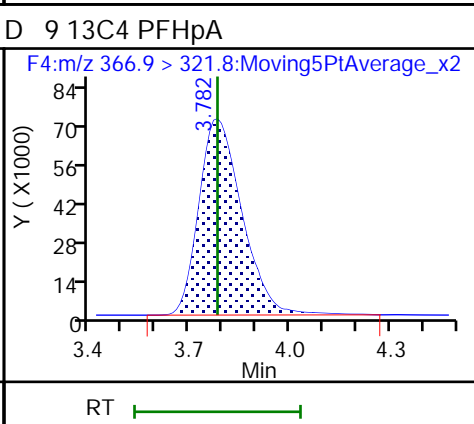
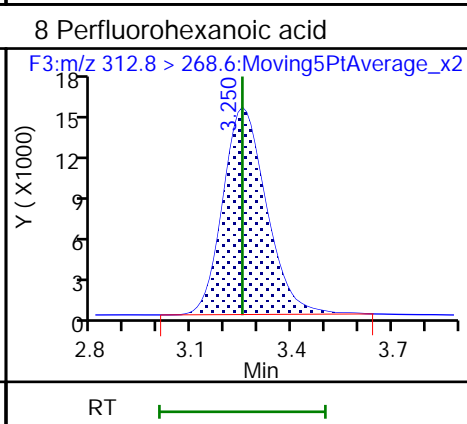
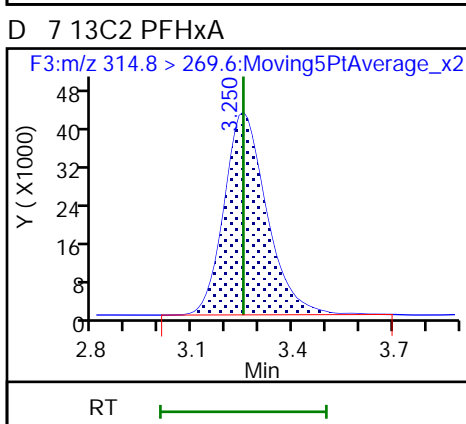
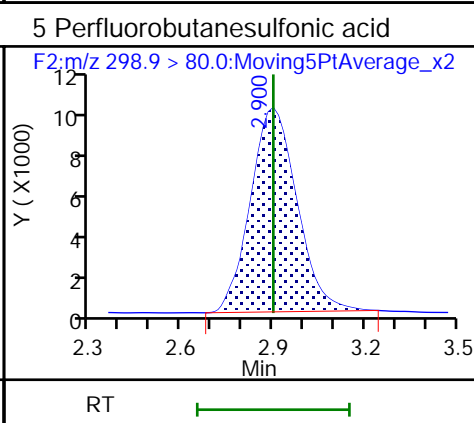
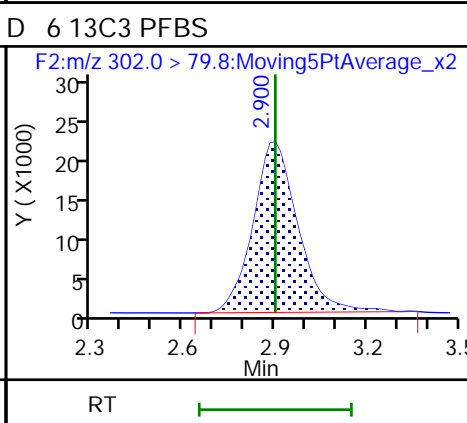
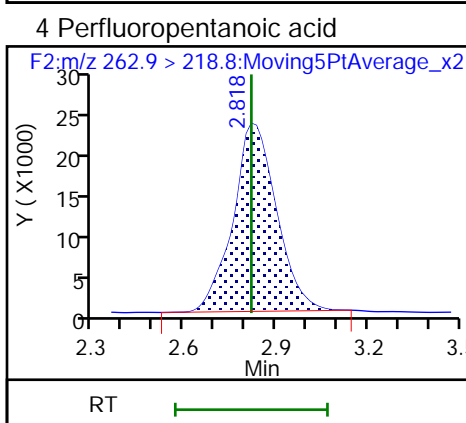
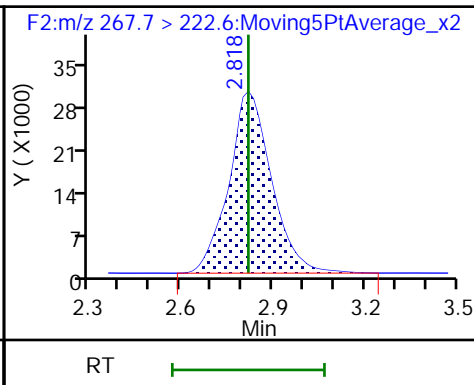
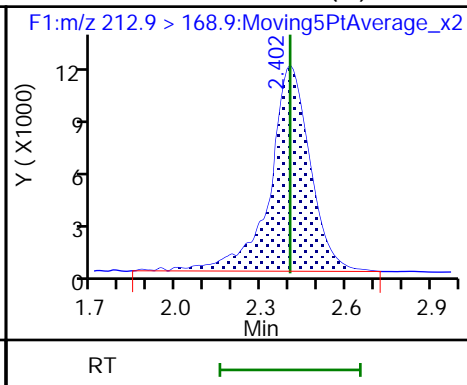
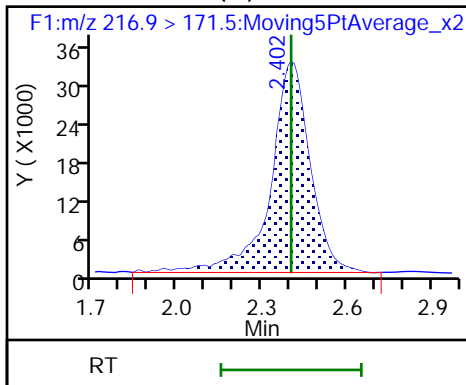
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

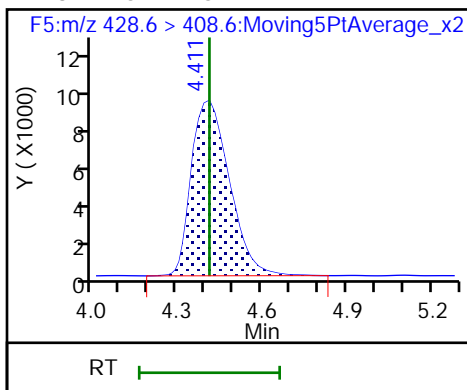
D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

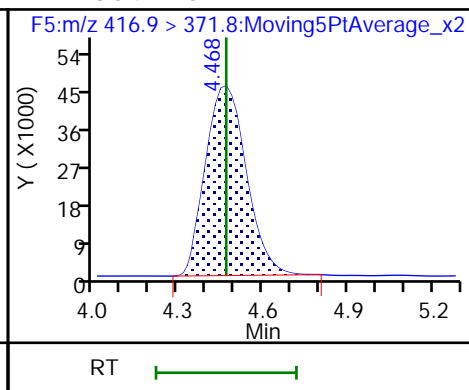
D 3 13C5 PFPeA



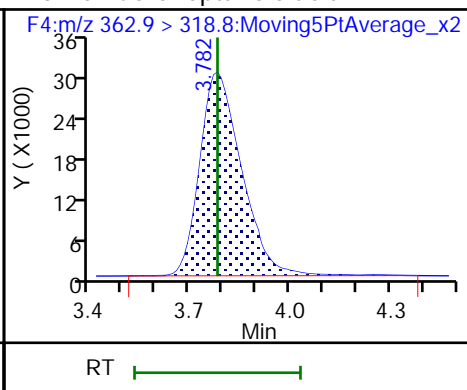
D 13 M2-6:2 FTS



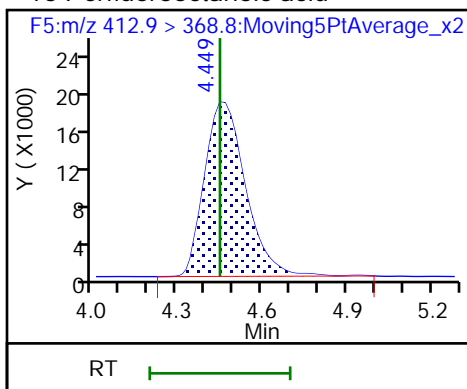
D 17 13C4 PFOA



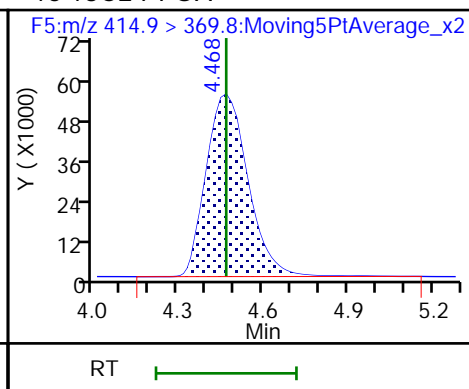
10 Perfluoroheptanoic acid



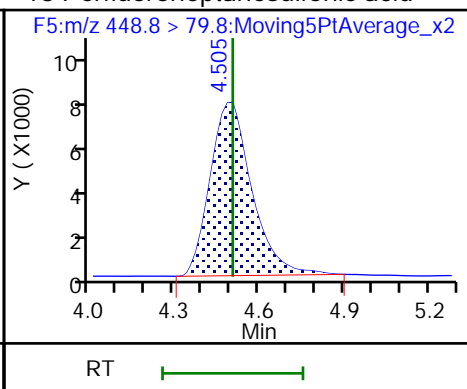
16 Perfluorooctanoic acid



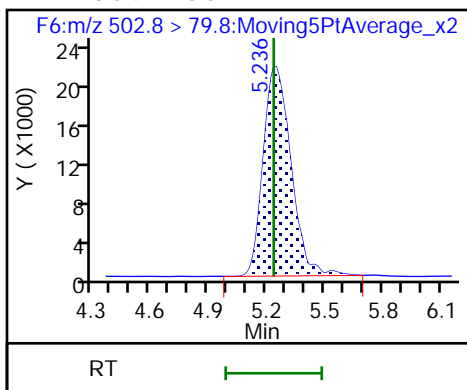
* 15 13C2 PFOA



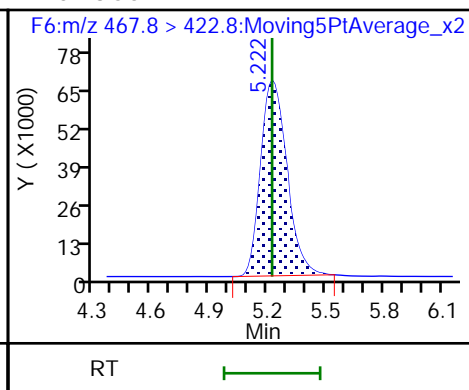
18 Perfluoroheptanesulfonic acid



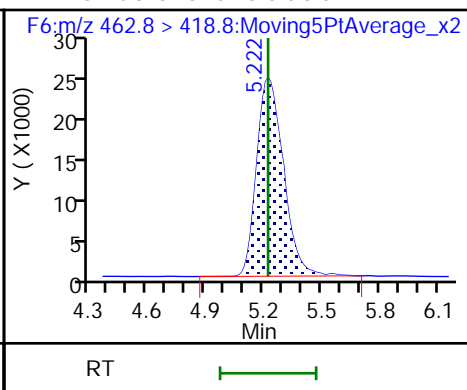
D 22 13C4 PFOS



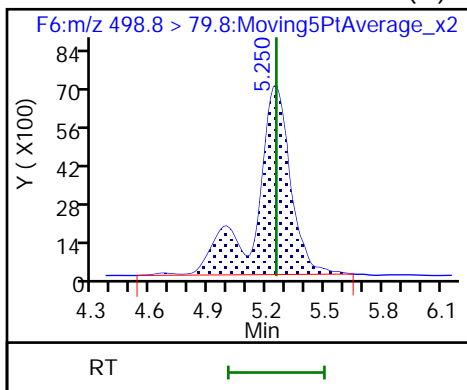
D 20 13C5 PFNA



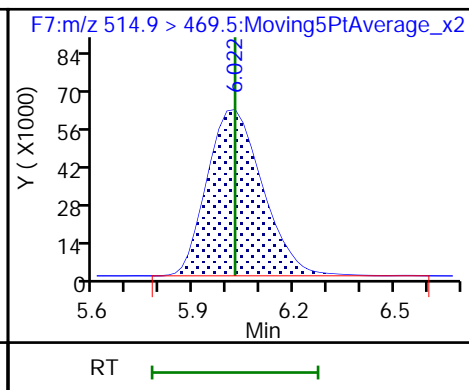
19 Perfluorononanoic acid



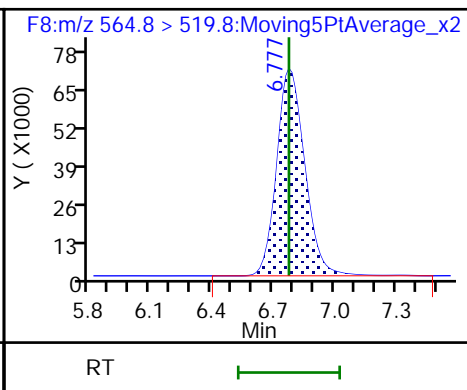
21 Perfluorooctanesulfonic acid (M)



D 26 13C2 PFDA

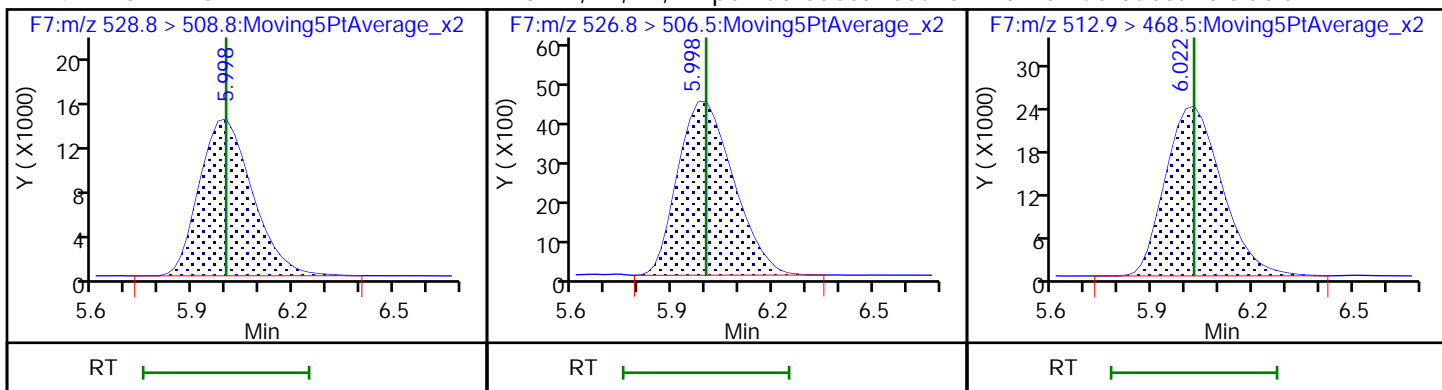


D 32 13C2 PFUnA



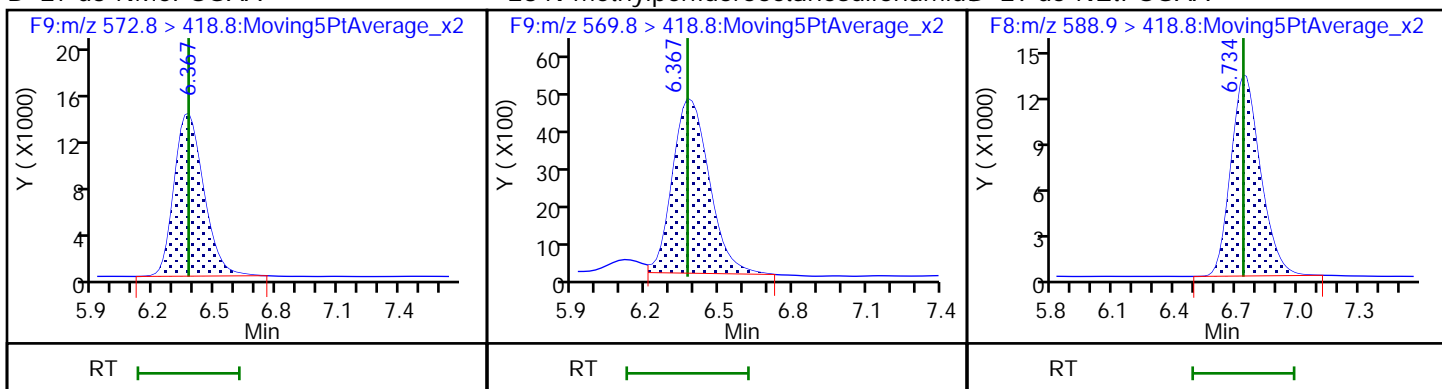
D 24 M2-8:2 FTS

23 1H,1H,2H,2H-perfluorodecanesulfonyl 25 Perfluorodecanoic acid



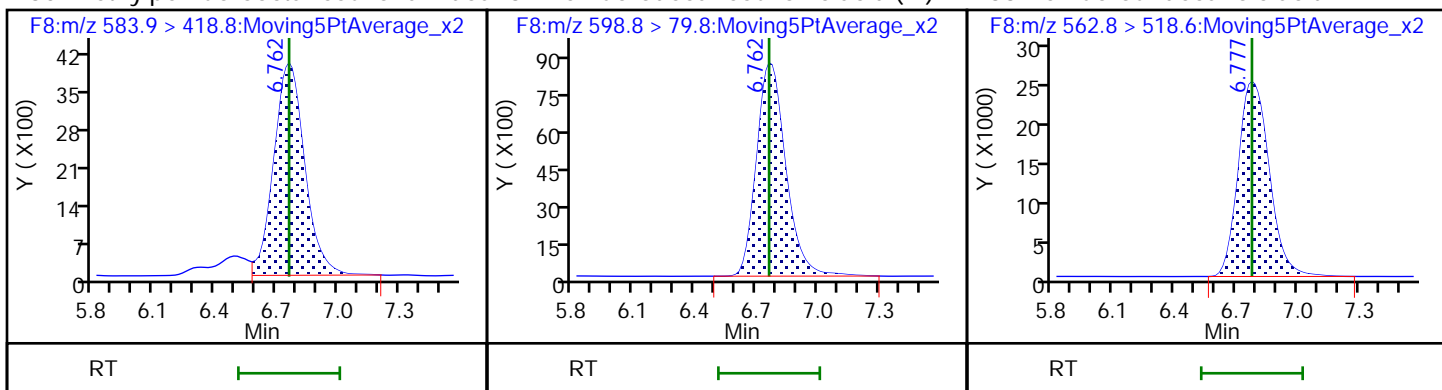
D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamid 29 d5-NEtFOSAA



30 N-ethylperfluorooctanesulfonamidoa 31 Perfluorodecanesulfonic acid (M)

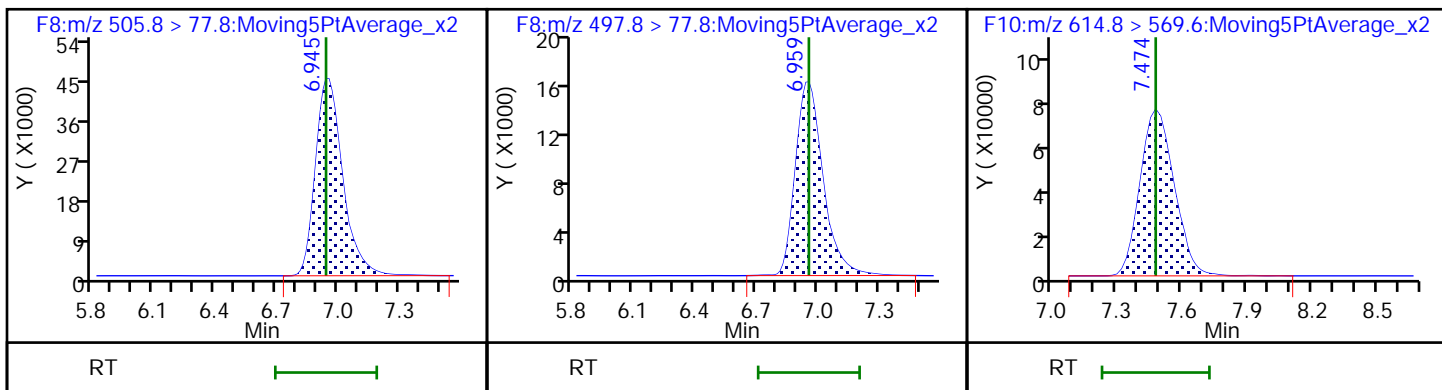
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

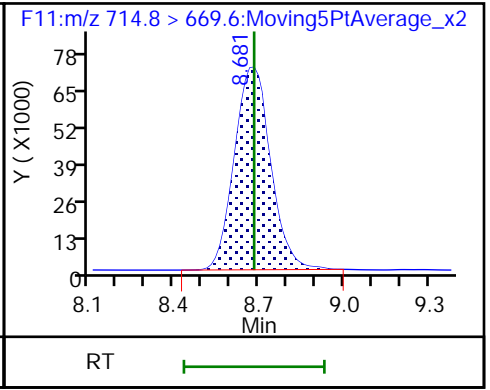
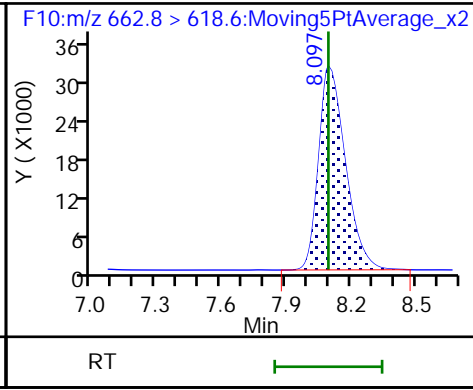
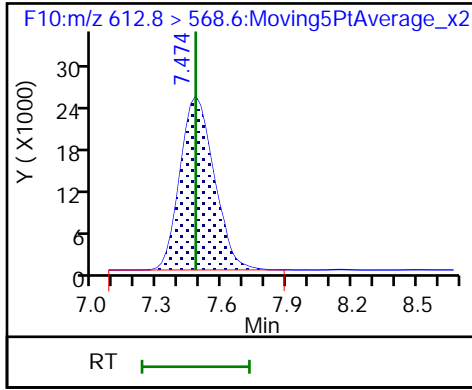
D 37 13C2 PFDaA



36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

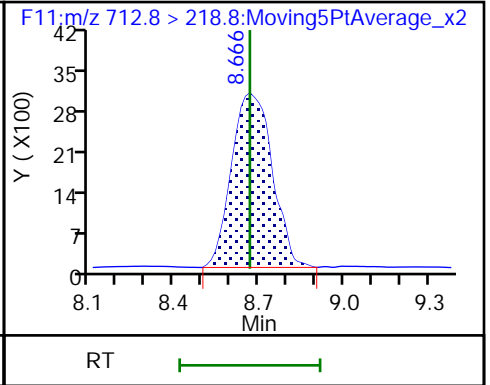
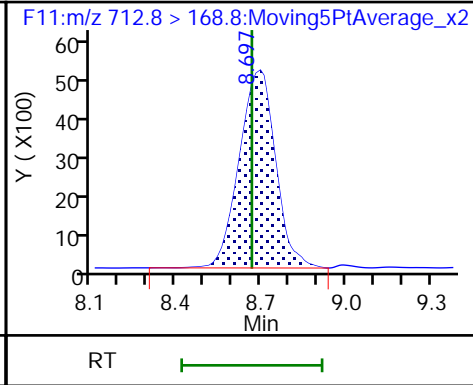
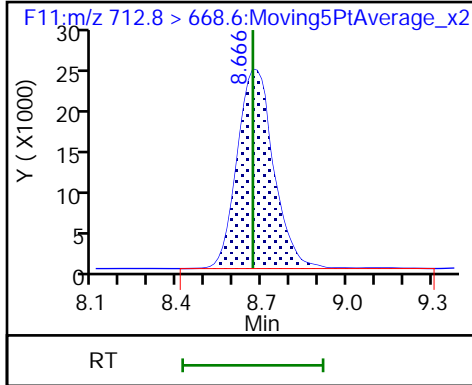
D 40 13C2 PFTeDA



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid



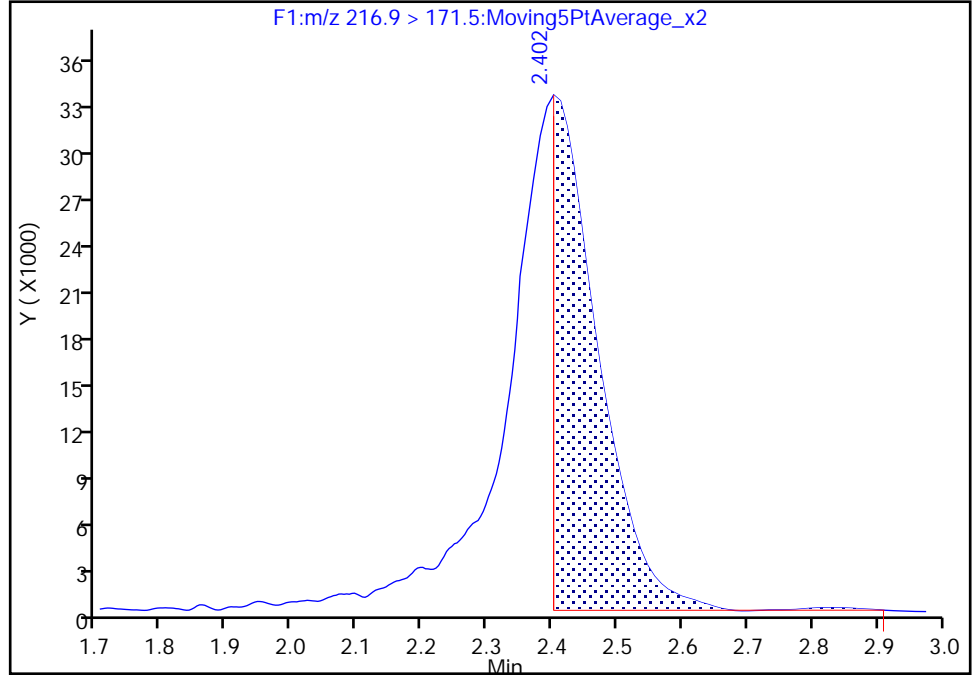
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A06.d
Injection Date: 07-Jan-2019 18:32:10 Instrument ID: LC410
Lims ID: CCVIS
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

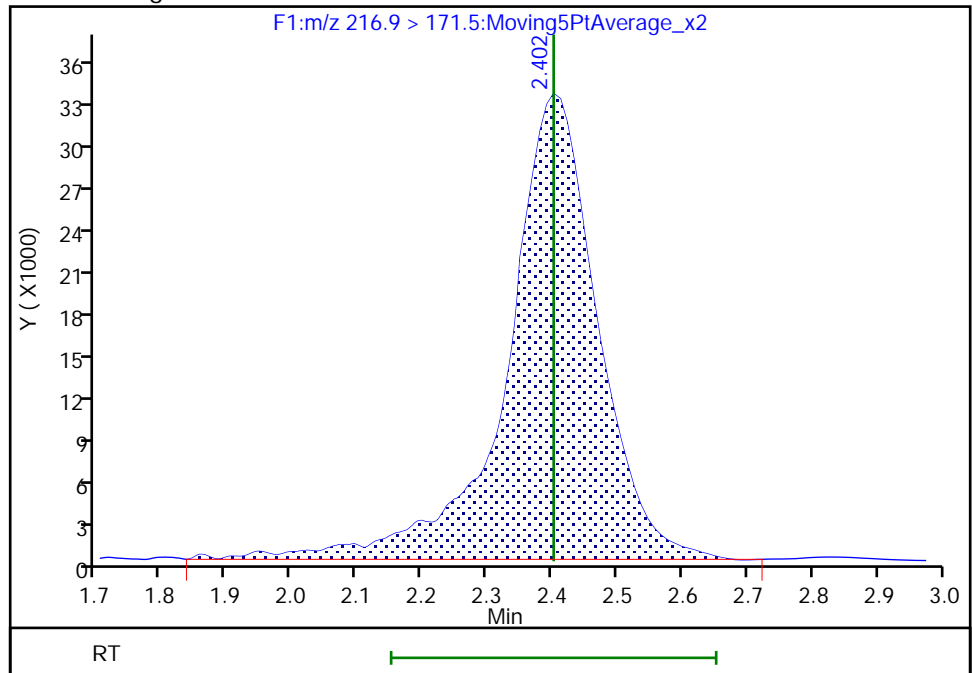
RT: 2.40
Area: 158142
Amount: 23.603944
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 327697
Amount: 48.911369
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:25:15
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

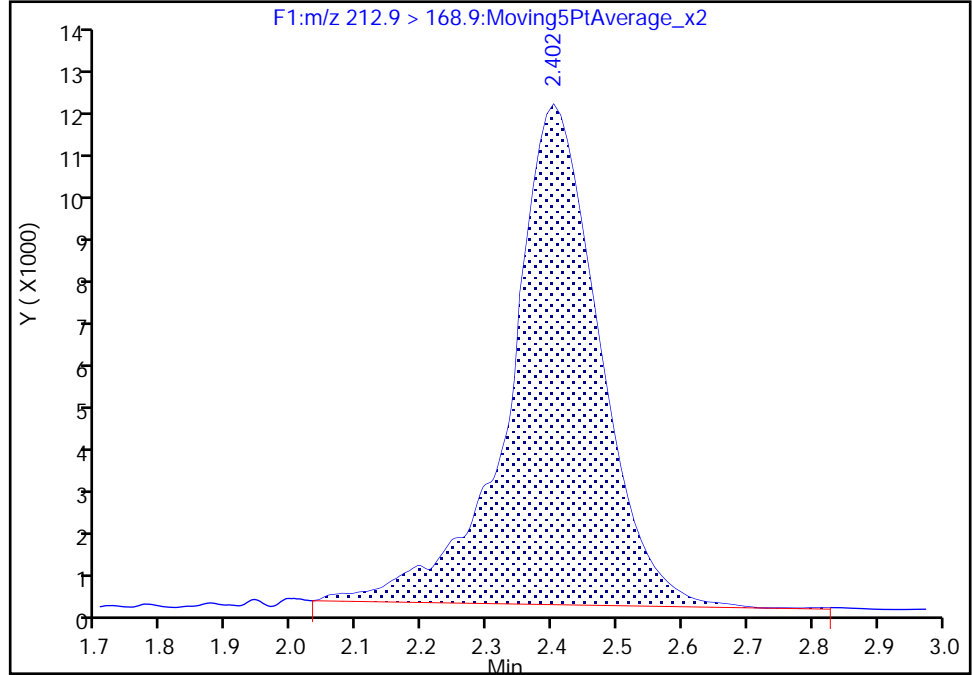
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A06.d
Injection Date: 07-Jan-2019 18:32:10 Instrument ID: LC410
Lims ID: CCVIS
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

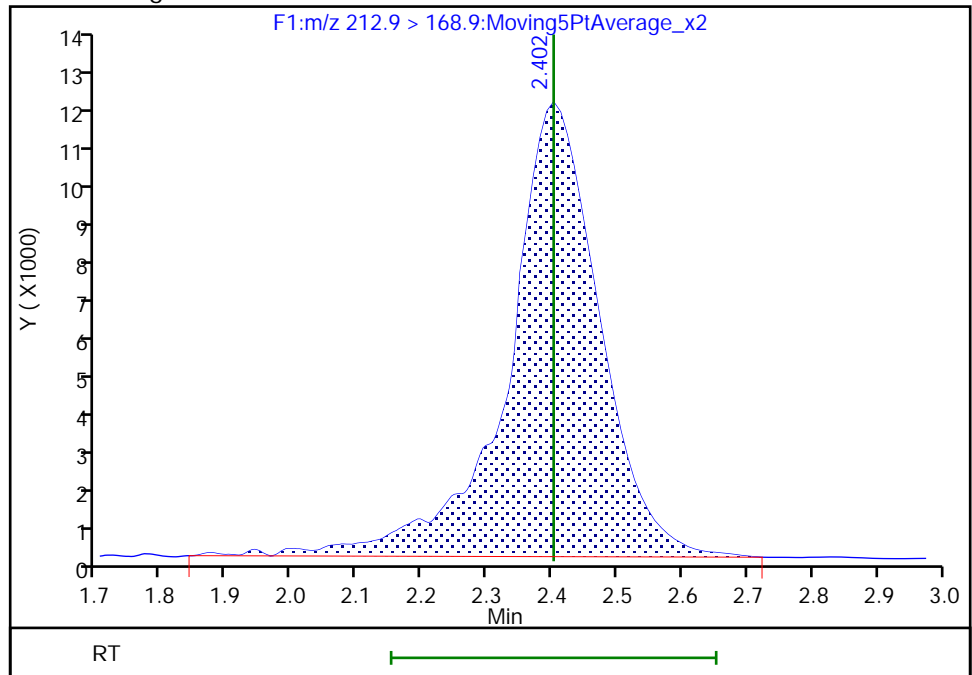
RT: 2.40
Area: 109468
Amount: 19.523144
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 112974
Amount: 20.154523
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:25:20
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

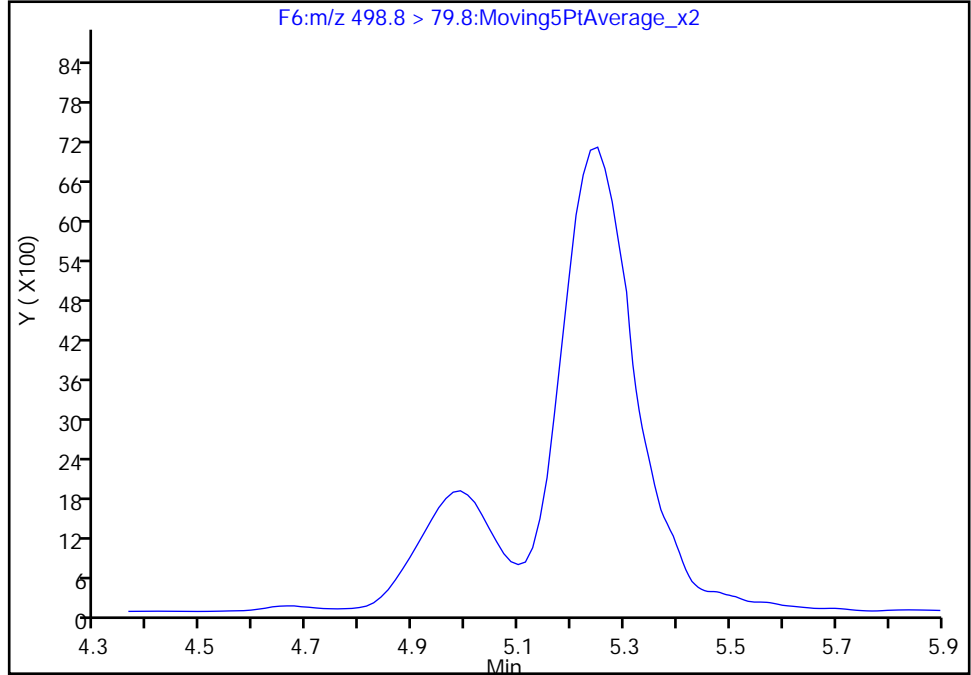
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A06.d
Injection Date: 07-Jan-2019 18:32:10 Instrument ID: LC410
Lims ID: CCVIS
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

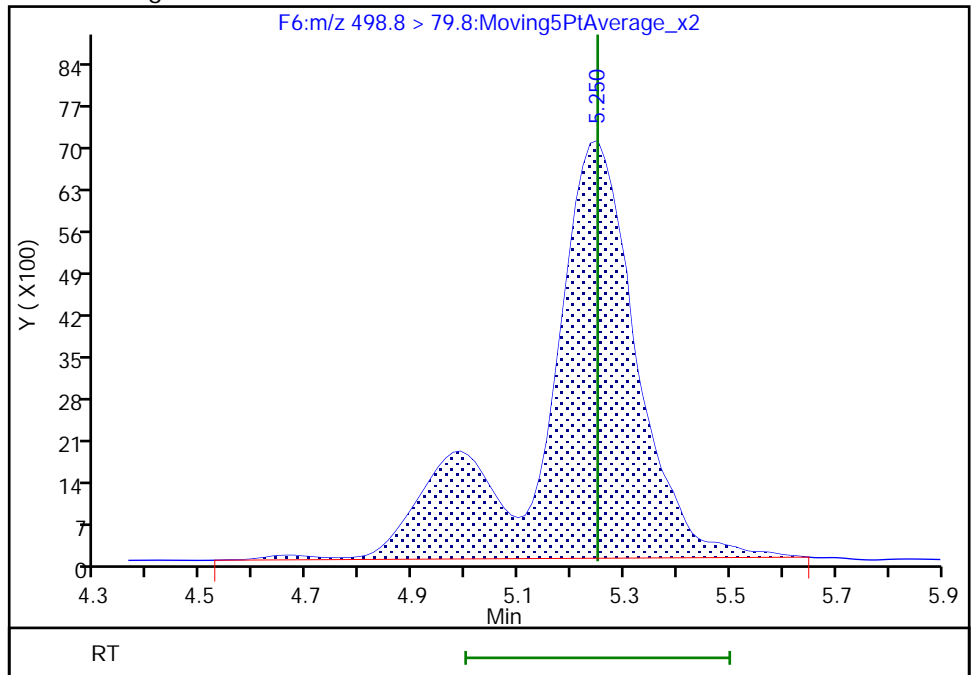
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 5.25
Area: 87482
Amount: 18.866512
Amount Units: ng/ml



TestAmerica Burlington

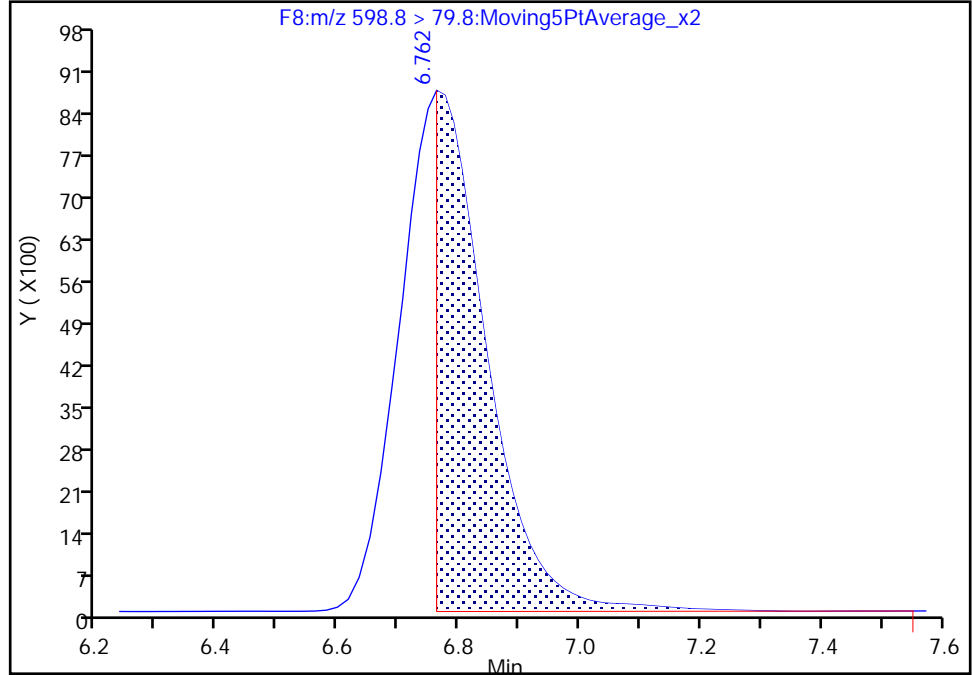
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A06.d
Injection Date: 07-Jan-2019 18:32:10 Instrument ID: LC410
Lims ID: CCVIS
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

31 Perfluorodecanesulfonic acid, CAS: 335-77-3

Signal: 1

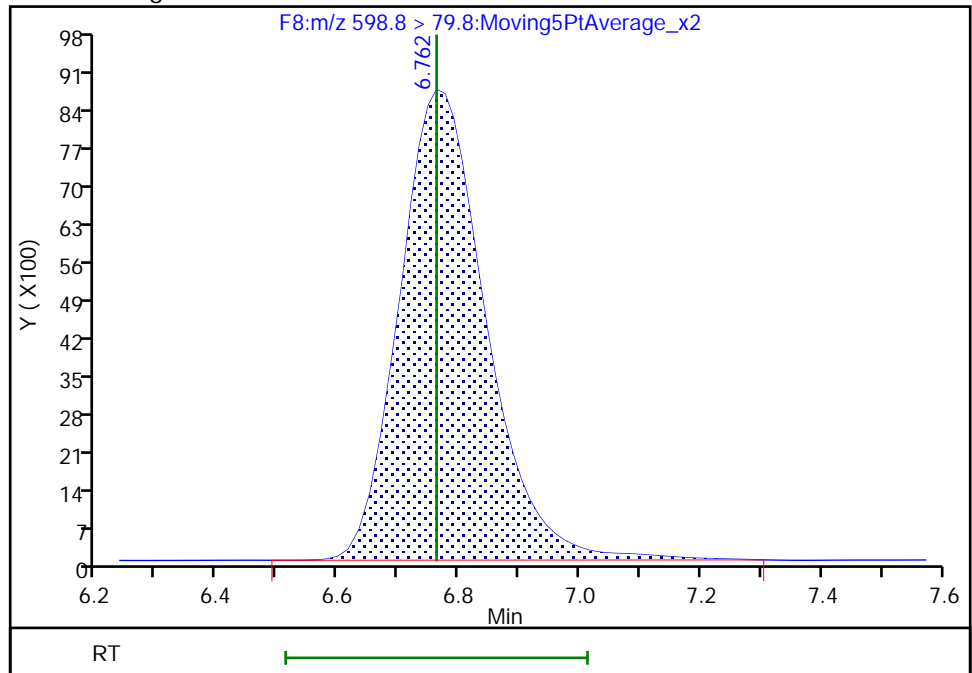
RT: 6.76
Area: 50088
Amount: 10.674086
Amount Units: ng/ml

Processing Integration Results



RT: 6.76
Area: 86586
Amount: 18.452053
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:24:37
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCVL 200-138864/7 Calibration Date: 01/07/2019 18:48
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A07.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L1ID		1.026		1020	1000	2.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	2.848	2.531		889	1000	-11.1	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.745	1.196		685	1000	-31.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.038	1.132		1090	1000	9.1	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9775	1.099		1120	1000	12.4	50.0
Perfluorohexanesulfonic acid (PFHxS)	L1ID		1.193		547	1000	-45.3	50.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.9845	1.107		1120	1000	12.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	0.9899	1.209		1220	1000	22.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9547	0.8060		844	1000	-15.6	50.0
Perfluorononanoic acid (PFNA)	AveID	1.099	1.006		915	1000	-8.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.034	0.9118		882	1000	-11.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.009	1.253		1240	1000	24.1	50.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.8068	0.8389		1040	1000	4.0	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.086	1.079		993	1000	-0.7	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9627	0.9220		958	1000	-4.2	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	1.046	0.9660		923	1000	-7.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.026	0.9678		943	1000	-5.7	50.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.8462	0.9825		1160	1000	16.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8584	0.8844		1030	1000	3.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.9775	1.009		1030	1000	3.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.9748	0.6926		711	1000	-28.9	50.0
13C4 PFBA	Ave	0.5875	0.5828		49600	50000	-0.8	50.0
13C5 PFPeA	Ave	0.3725	0.5054		67900	50000	35.7	50.0
13C3 PFBS	Ave	0.3075	0.4194		63400	46500	36.4	50.0
13C2 PFHxA	Ave	0.6710	0.6659		49600	50000	-0.8	50.0
13C4 PFHpA	Ave	1.229	1.166		47400	50000	-5.1	50.0
18O2 PFHxS	Ave	0.3555	0.4652		61900	47300	30.8	50.0
M2-6:2 FTS	Ave	0.1097	0.1245		53900	47500	13.5	50.0
13C4 PFOA	Ave	0.9383	0.8530		45400	50000	-9.1	50.0
13C5 PFNA	Ave	1.265	1.106		43700	50000	-12.6	50.0
13C4 PFOS	Ave	0.3148	0.4178		63400	47800	32.7	50.0
M2-8:2 FTS	Ave	0.2971	0.2779		44800	47900	-6.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCVL 200-138864/7 Calibration Date: 01/07/2019 18:48
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A07.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFDA	Ave	1.305	1.324		50800	50000	1.5	50.0
d3-NMeFOSAA	Ave	0.3333	0.2512		37700	50000	-24.6	50.0
d5-NEtFOSAA	Ave	0.2828	0.2477		43800	50000	-12.4	50.0
13C2 PFUnA	Ave	1.358	1.293		47600	50000	-4.8	50.0
13C8 FOSA	Ave	0.6063	0.7424		61200	50000	22.4	50.0
13C2 PFDoA	Ave	1.718	1.393		40500	50000	-19.0	50.0
13C2 PFTeDA	Ave	1.577	1.179		37400	50000	-25.2	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 07-Jan-2019 18:48:01 ALS Bottle#: 0 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-007 CCVL
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 08-Jan-2019 12:59:00 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0327

First Level Reviewer: chirgwinb Date: 07-Jan-2019 20:28:59

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.402	2.402	0.0	1.000	331767	49.6		99.2	293	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.413	2.402	0.011	1.004	6808	1.02		102	30.0	M
D 3 13C5 PFPeA										
267.7 > 222.6	2.818	2.818	0.0	1.000	287726	67.9		136	1695	
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.818	2.818	0.0	1.000	14567	0.8889		88.9	26.7	M
D 6 13C3 PFBS										
302.0 > 79.8	2.900	2.900	0.0	1.000	222012	63.4		136	895	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.900	2.900	0.0	1.000	5709	0.6852		68.5	50.5	M
D 7 13C2 PFHxA										
314.8 > 269.6	3.250	3.250	0.0	1.000	379075	49.6		99.2	2729	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.238	3.250	-0.012	0.996	8579	1.09		109	137	
D 9 13C4 PFHpA										
366.9 > 321.8	3.782	3.782	0.0	1.000	663712	47.4		94.9	834	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.782	3.782	0.0	1.000	14590	1.12		112	32.4	
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.826	3.815	0.011	1.003	6318	0.5468		54.7	41.4	M
D 11 18O2 PFHxS										
402.9 > 83.8	3.815	3.826	-0.011	1.000	250514	61.9		131	596	
D 13 M2-6:2 FTS										
428.6 > 408.6	4.412	4.411	0.001	1.000	67302	53.9		113	470	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.412	4.411	0.001	1.000	1568	1.12	112	22.9	
16 Perfluorooctanoic acid	412.9 > 368.8	4.468	4.449	0.019	1.004	11736	1.22	122	91.3	M
D 17 13C4 PFOA	416.9 > 371.8	4.449	4.468	-0.019	1.000	485551	45.4	90.9	4007	
* 15 13C2 PFOA	414.9 > 369.8	4.449	4.468	-0.019		569256	50.0		1441	S
18 Perfluoroheptanesulfonic acid	448.8 > 79.8	4.505	4.505	0.0	0.860	3834	0.8443	84.4	31.2	M
D 20 13C5 PFNA	467.8 > 422.8	5.222	5.222	0.0	1.000	629534	43.7	87.4	1080	
19 Perfluorononanoic acid	462.8 > 418.8	5.222	5.222	0.0	1.000	12668	0.9153	91.5	61.4	M
D 22 13C4 PFOS	502.8 > 79.8	5.236	5.236	0.0	1.000	227364	63.4	133	438	
21 Perfluorooctanesulfonic acid	498.8 > 79.8	5.250	5.250	0.0	1.003	4337	0.8821	88.2	68.4	M
D 24 M2-8:2 FTS	528.8 > 508.8	5.974	5.998	-0.024	1.000	151532	44.8	93.5	510	
23 1H,1H,2H,2H-perfluorodecanesulfoni	526.8 > 506.5	6.022	5.998	0.024	1.008	2654	1.04	104	13.2	M
D 26 13C2 PFDA	514.9 > 469.5	6.022	6.022	0.0	1.000	753831	50.8	102	3135	
25 Perfluorodecanoic acid	512.9 > 468.5	5.999	6.022	-0.023	0.996	18892	1.24	124	94.1	
28 N-methylperfluorooctanesulfonamido	569.8 > 418.8	6.385	6.367	0.018	1.003	3084	0.99	99.3	9.5	M
D 27 d3-NMeFOSAA	572.8 > 418.8	6.367	6.367	0.0	1.000	142968	37.7	75.4	1967	
D 29 d5-NEtFOSAA	588.9 > 418.8	6.734	6.734	0.0	1.000	141006	43.8	87.6	680	
30 N-ethylperfluorooctanesulfonamidoa	583.9 > 418.8	6.762	6.762	0.0	1.004	2600	0.9577	95.8	61.2	M
31 Perfluorodecanesulfonic acid	598.8 > 79.8	6.777	6.762	0.015	1.294	4595	0.9235	92.3	87.0	
D 32 13C2 PFUnA	564.8 > 519.8	6.777	6.777	0.0	1.000	736288	47.6	95.2	1981	
33 Perfluoroundecanoic acid	562.8 > 518.6	6.791	6.777	0.014	1.002	14251	0.9433	94.3	140	
D 35 13C8 FOSA	505.8 > 77.8	6.945	6.945	0.0	1.000	422599	61.2	122	5171	
34 Perfluorooctanesulfonamide	497.8 > 77.8	6.945	6.959	-0.014	1.000	8304	1.16	116	74.1	
D 37 13C2 PFDoA	614.8 > 569.6	7.474	7.474	0.0	1.000	792775	40.5	81.0	7315	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
36 Perfluorododecanoic acid	612.8 > 568.6	7.474	7.474	0.0	1.000	14023	1.03	103	121		
38 Perfluorotridecanoic acid	662.8 > 618.6	8.097	8.097	0.0	0.936	13546	1.03	103	142		
39 Perfluorotetradecanoic acid	712.8 > 668.6	8.666	8.666	0.0	1.002	9299	0.7105	Target=1.00	71.1	42.8	M
	712.8 > 168.8	8.681	8.666	0.015	1.004	2584		3.60(0.90-1.10)		15.2	M
	712.8 > 218.8	8.666	8.666	0.0	1.002	429		21.68(0.90-1.10)		5.4	M
D 40 13C2 PFTeDA	714.8 > 669.6	8.651	8.681	-0.030	1.000	671323	37.4		74.8	537	

QC Flag Legend

Processing Flags

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L1_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d

Injection Date: 07-Jan-2019 18:48:01

Instrument ID: LC410

Lims ID: CCVL

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

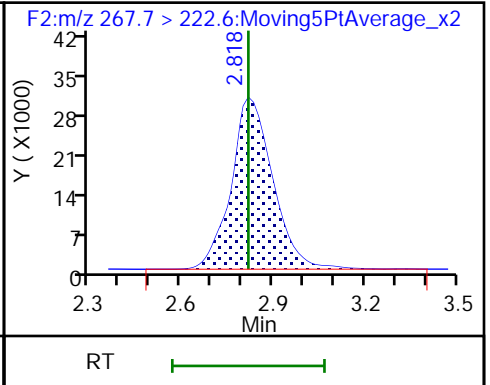
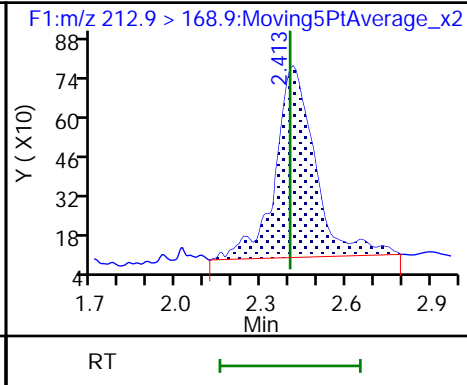
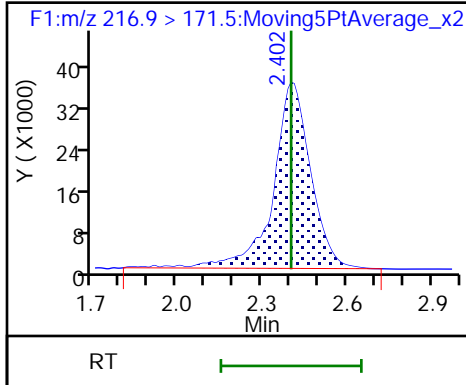
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

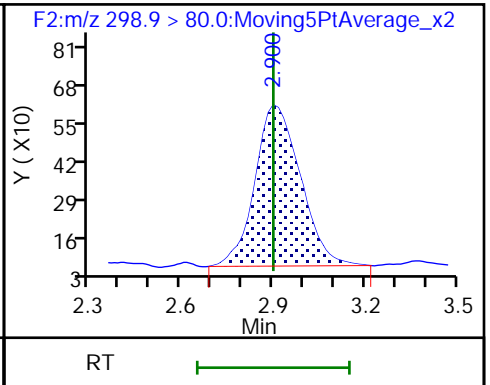
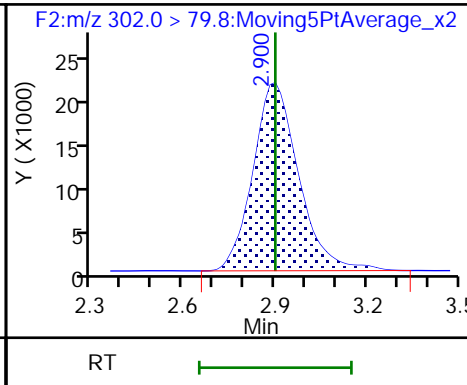
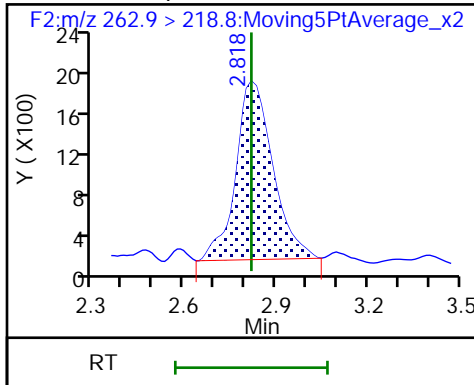
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

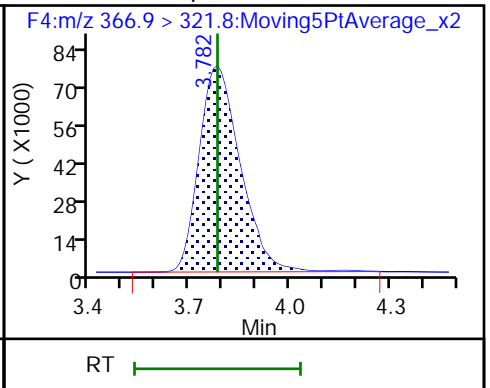
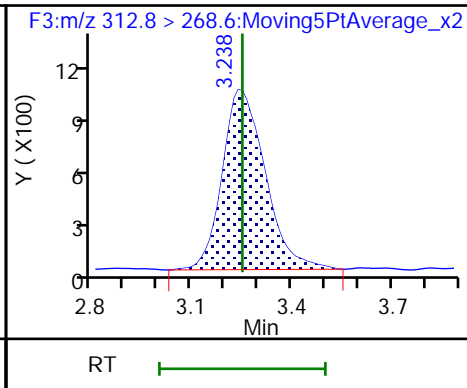
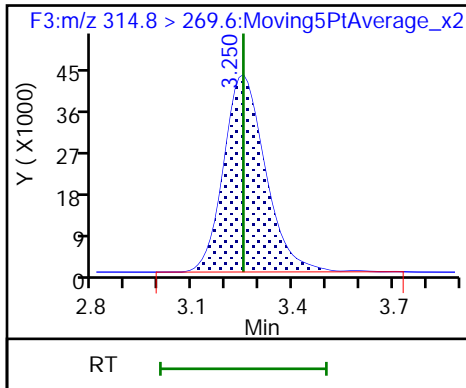
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

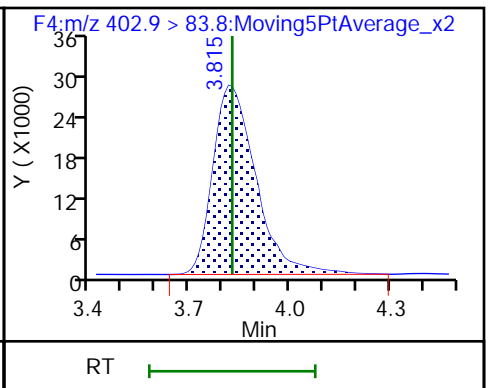
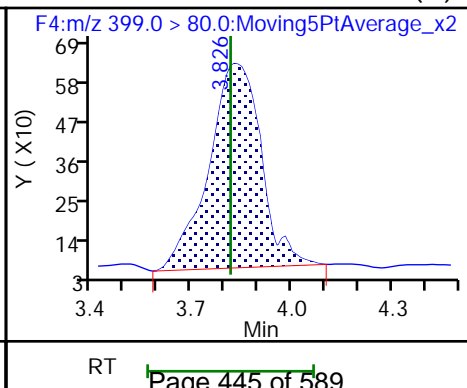
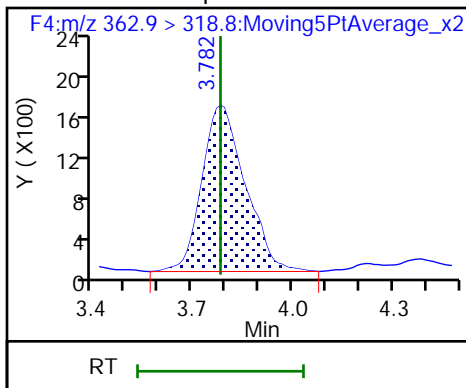
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

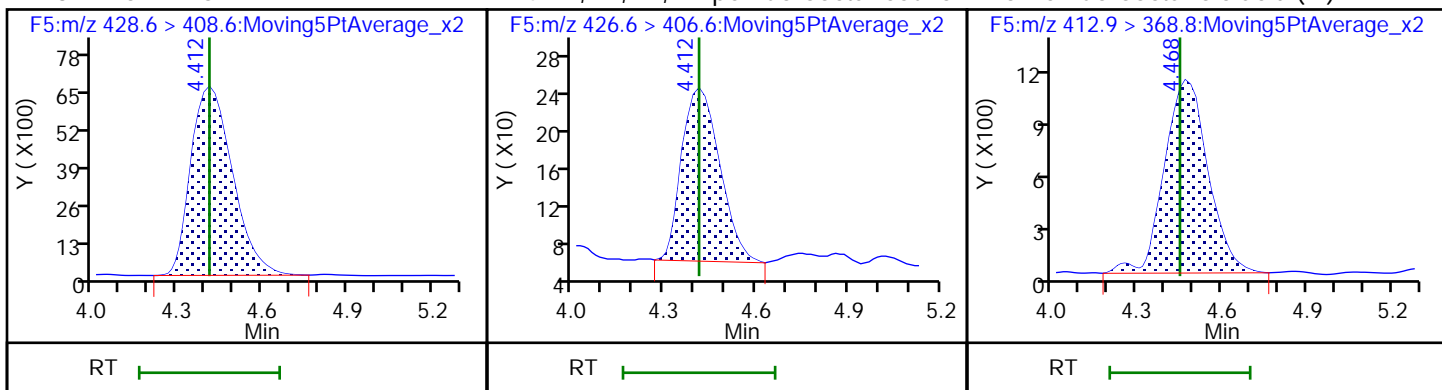
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

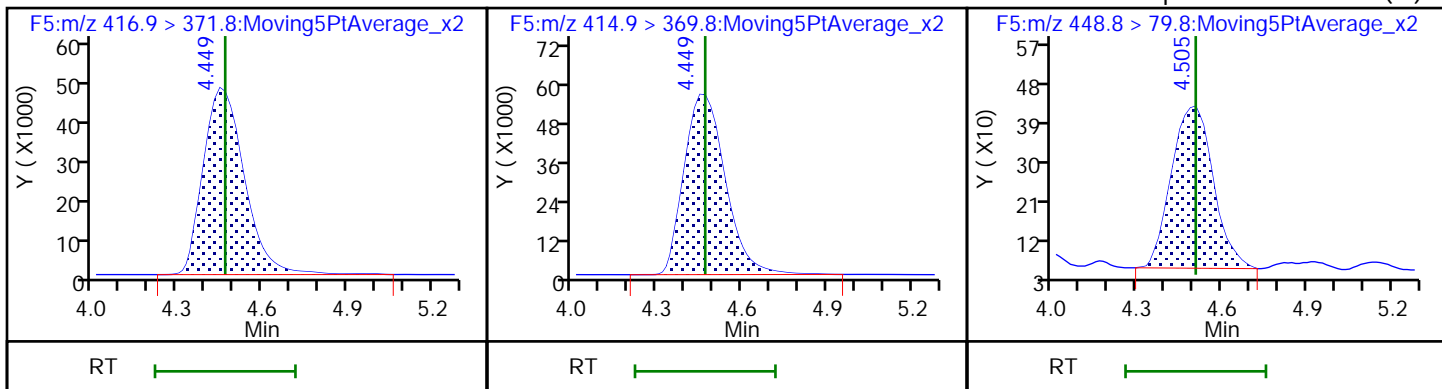
14 1H,1H,2H,2H-perfluorooctanesulfonyl 16 Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA

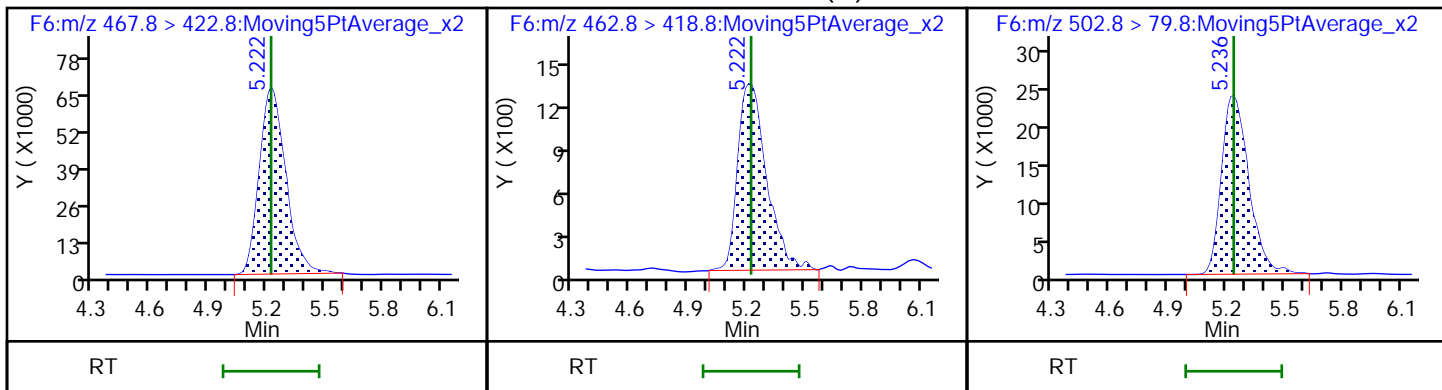
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid (M)

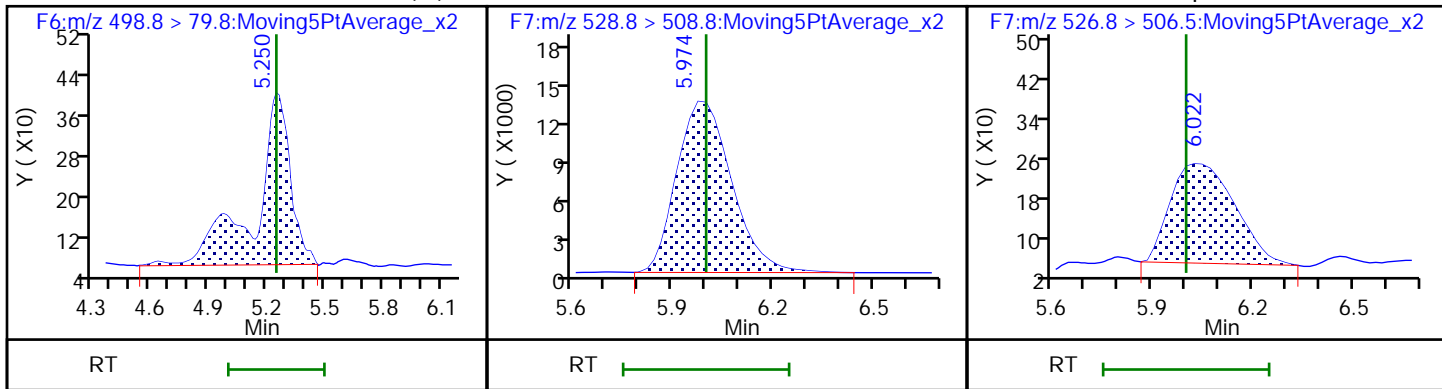
D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid (M)

D 24 M2-8:2 FTS

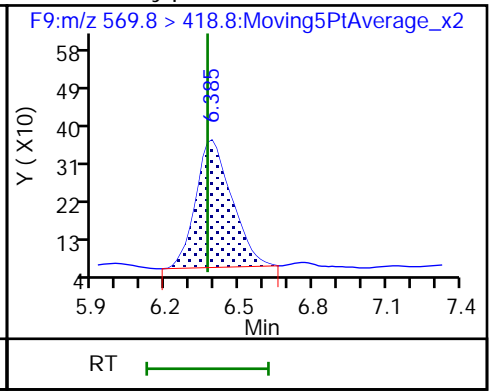
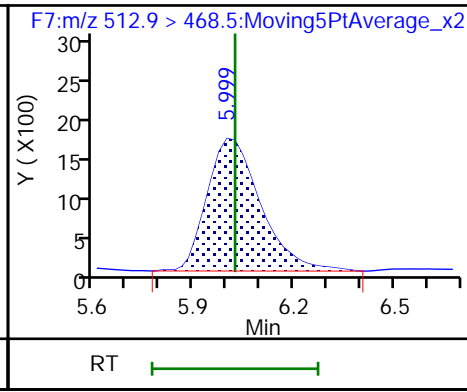
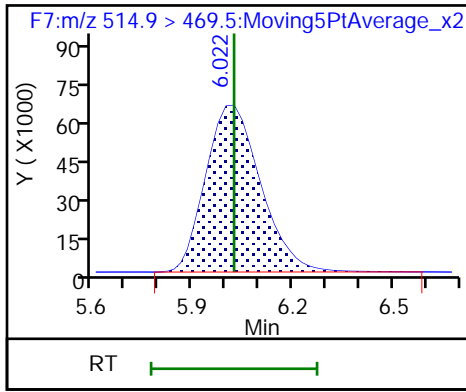
23 1H,1H,2H,2H-perfluorodecanesulfonyl (M)



D 26 13C2 PFDA

25 Perfluorodecanoic acid

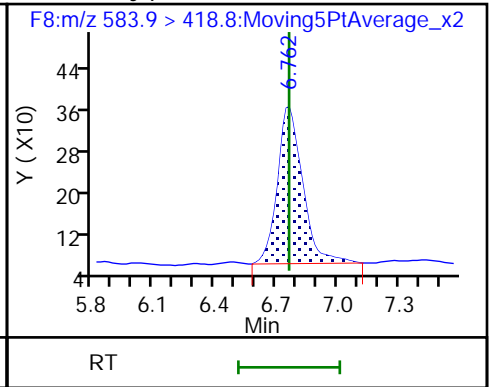
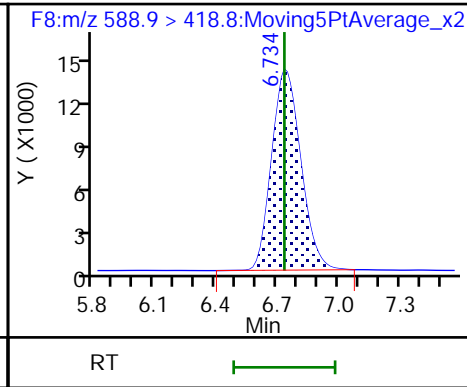
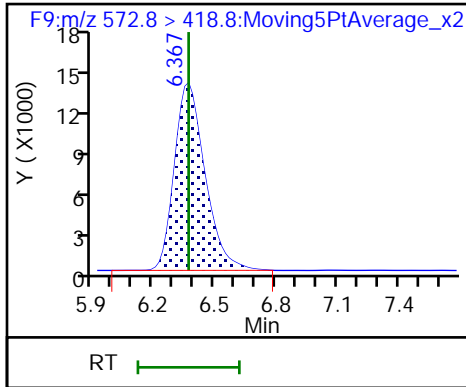
28 N-methylperfluorooctanesulfonamido (M)



D 27 d3-NMeFOSAA

D 29 d5-NEtFOSAA

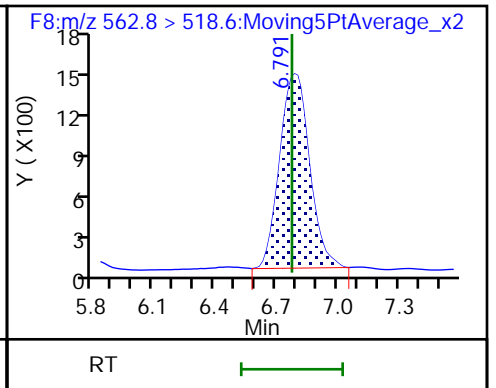
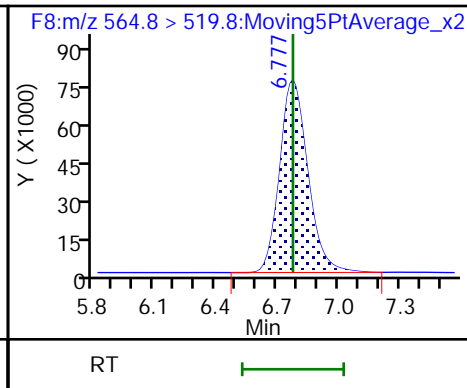
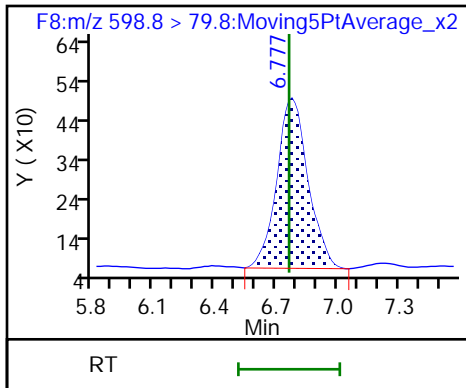
30 N-ethylperfluorooctanesulfonamidoa (M)



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

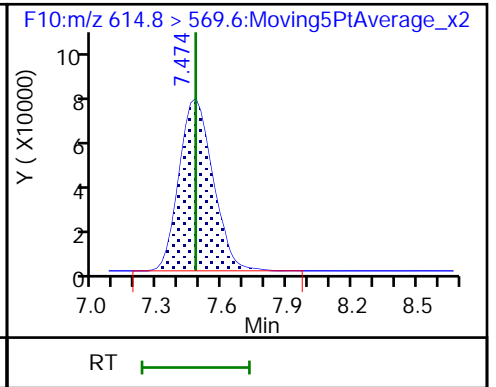
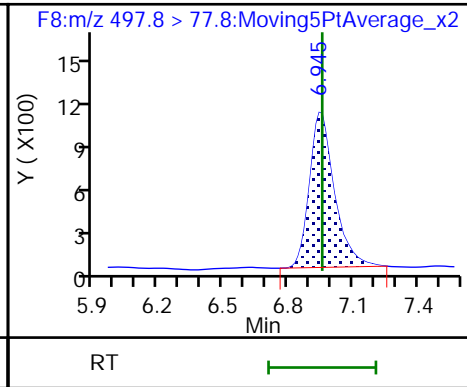
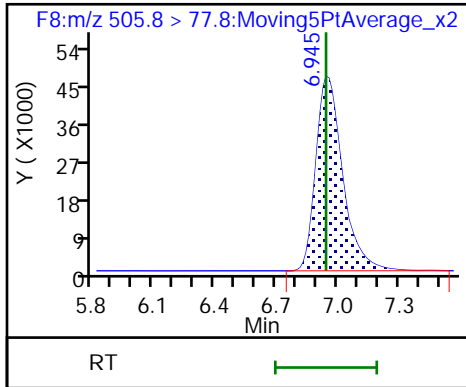
33 Perfluoroundecanoic acid

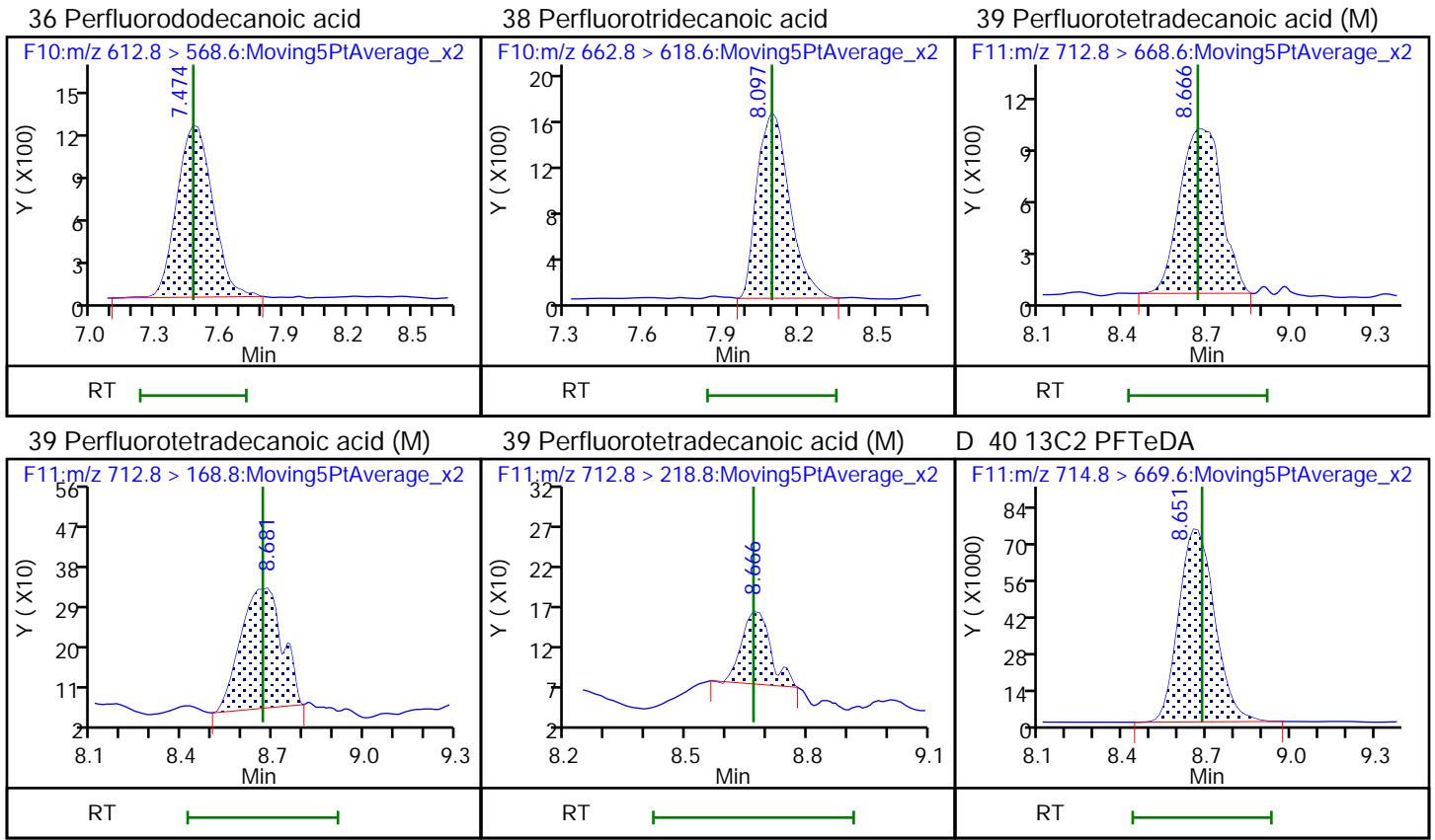


D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

D 37 13C2 PFDaA





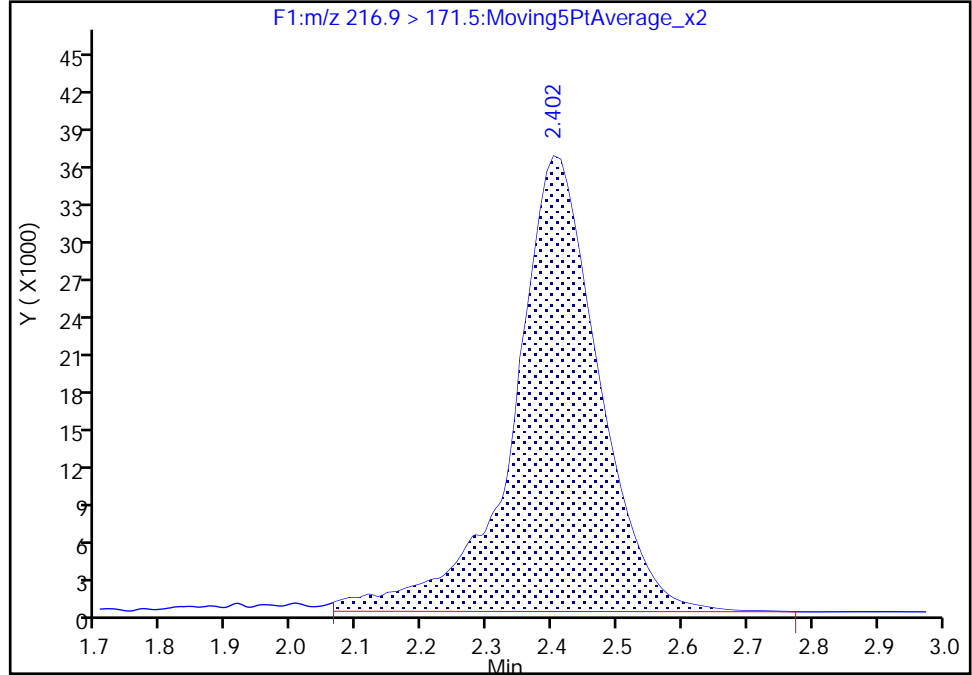
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

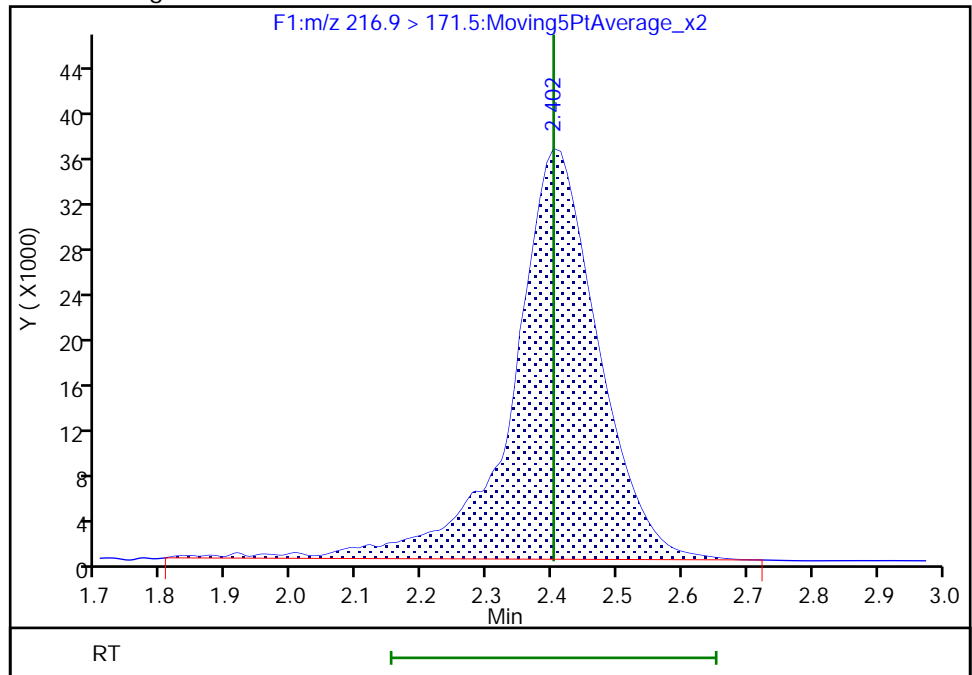
RT: 2.40
Area: 332242
Amount: 49.670587
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 331767
Amount: 49.599574
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:28:37
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

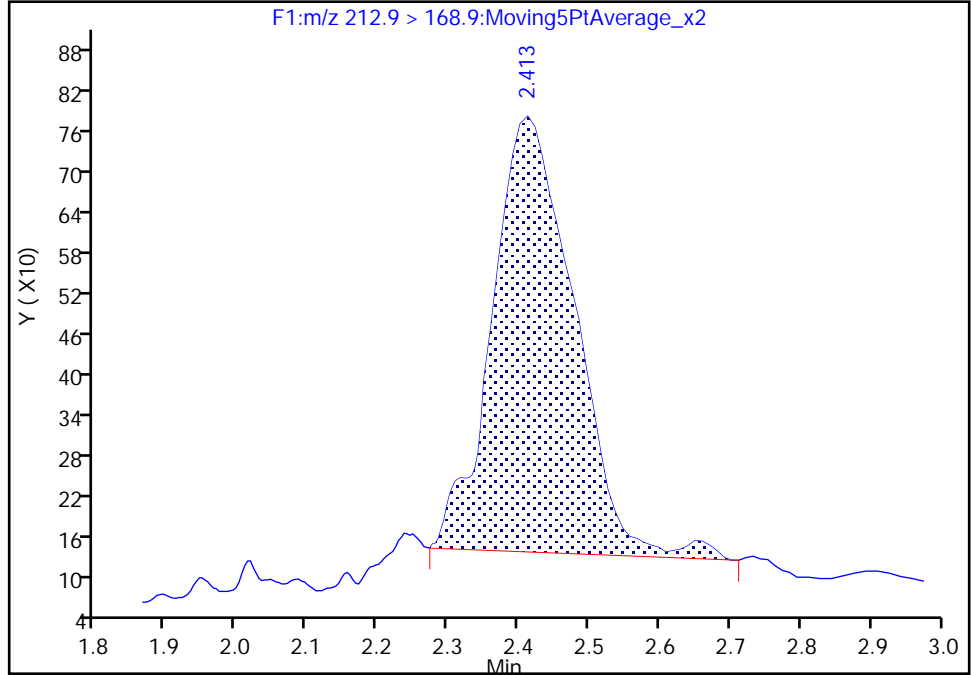
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

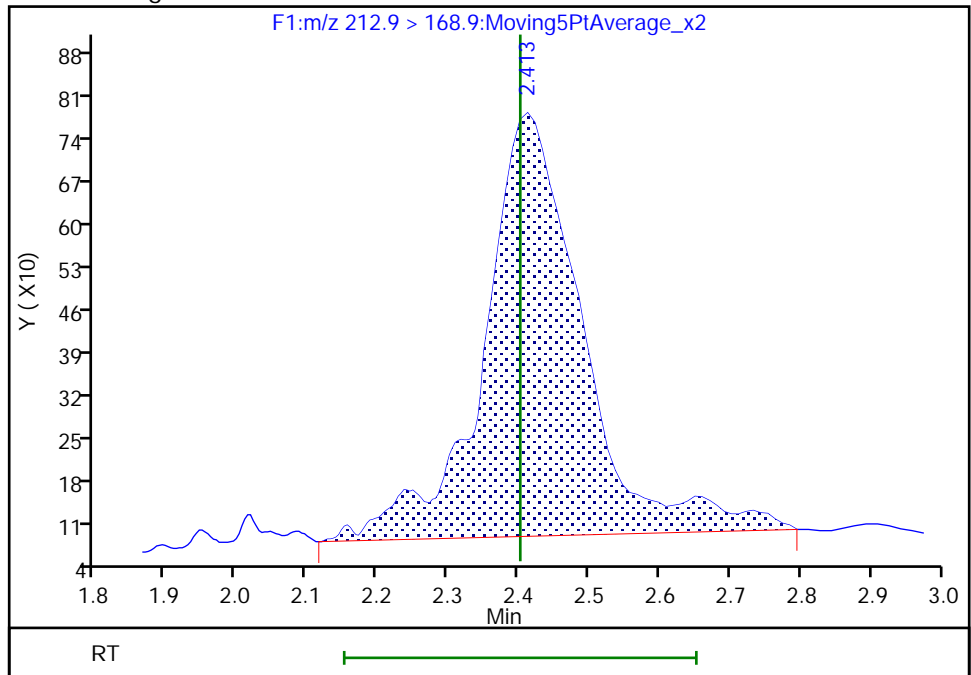
RT: 2.41
Area: 5214
Amount: 0.735691
Amount Units: ng/ml

Processing Integration Results



RT: 2.41
Area: 6808
Amount: 1.020551
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:28:31
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

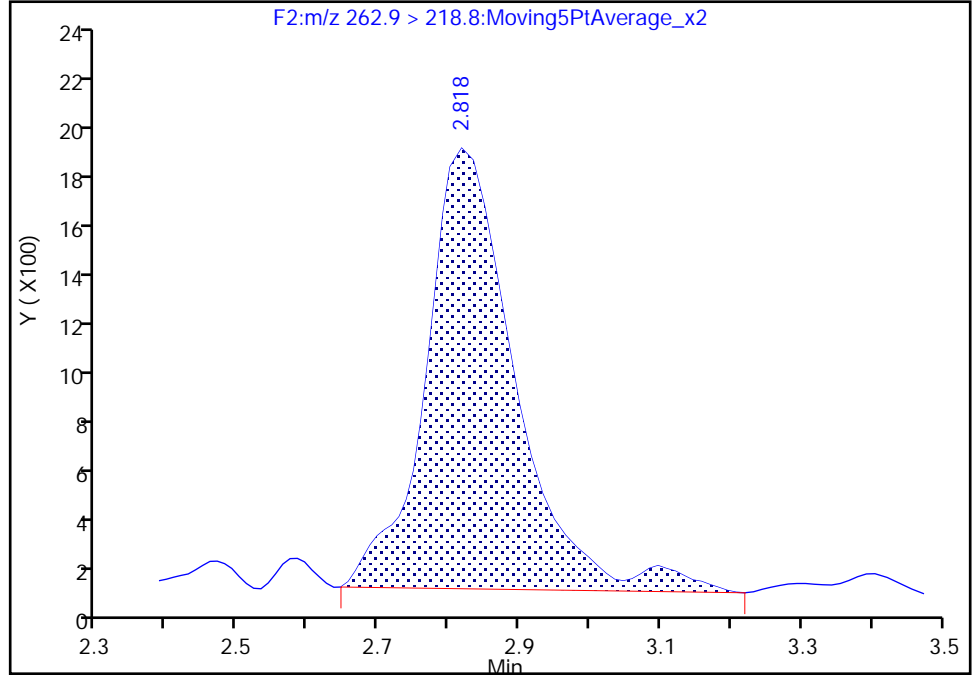
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

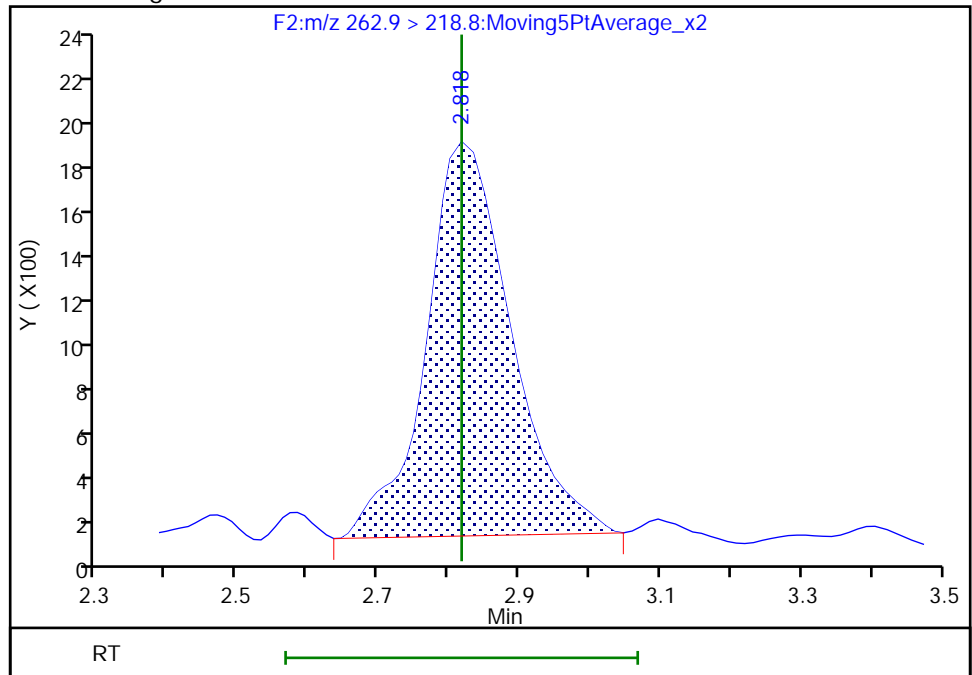
RT: 2.82
Area: 15576
Amount: 0.950426
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 14567
Amount: 0.888858
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:28:24
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

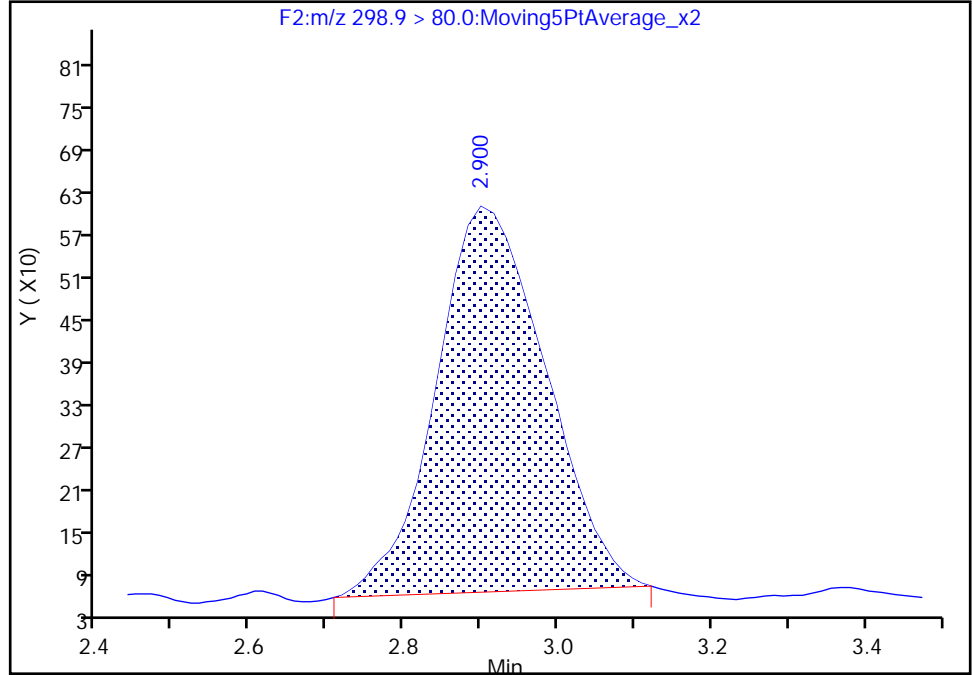
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

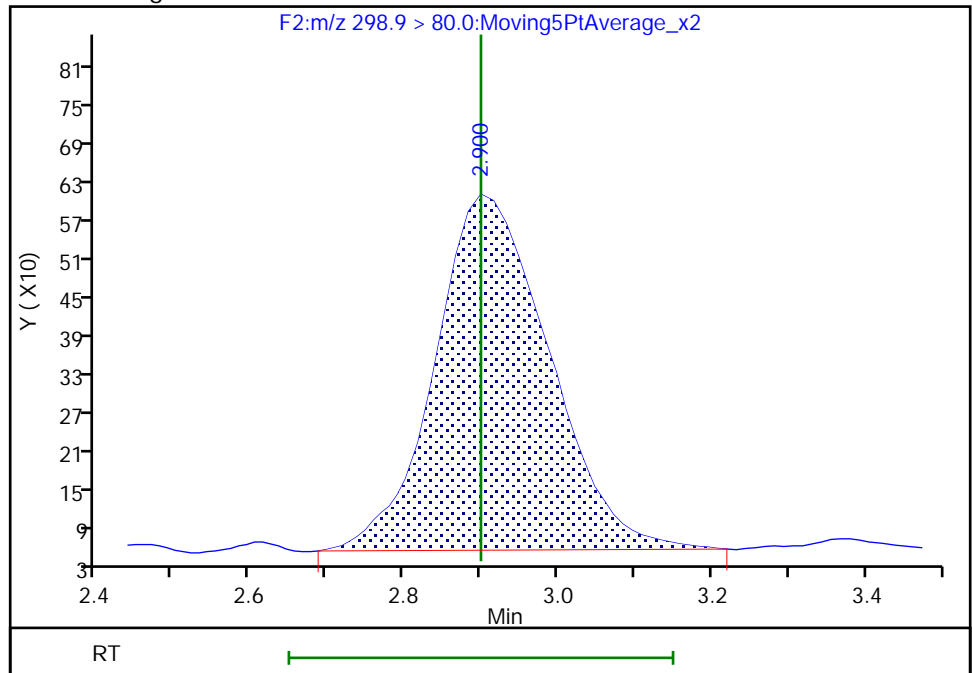
RT: 2.90
Area: 5373
Amount: 0.644900
Amount Units: ng/ml

Processing Integration Results



RT: 2.90
Area: 5709
Amount: 0.685228
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:28:12
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

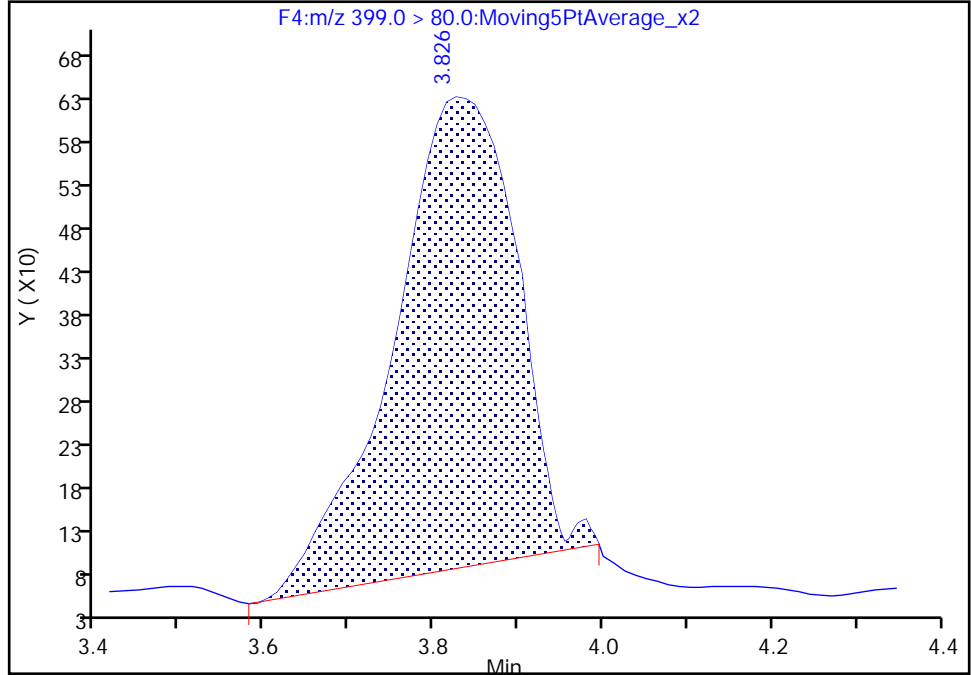
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Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

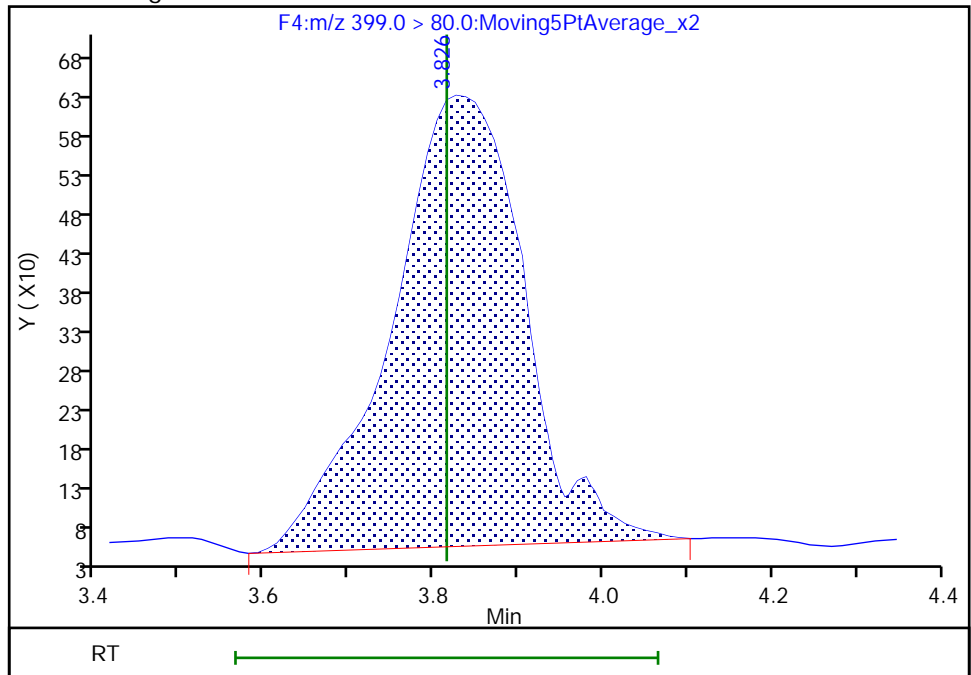
RT: 3.83
Area: 5545
Amount: 0.450868
Amount Units: ng/ml

Processing Integration Results



RT: 3.83
Area: 6318
Amount: 0.546786
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:28:04
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

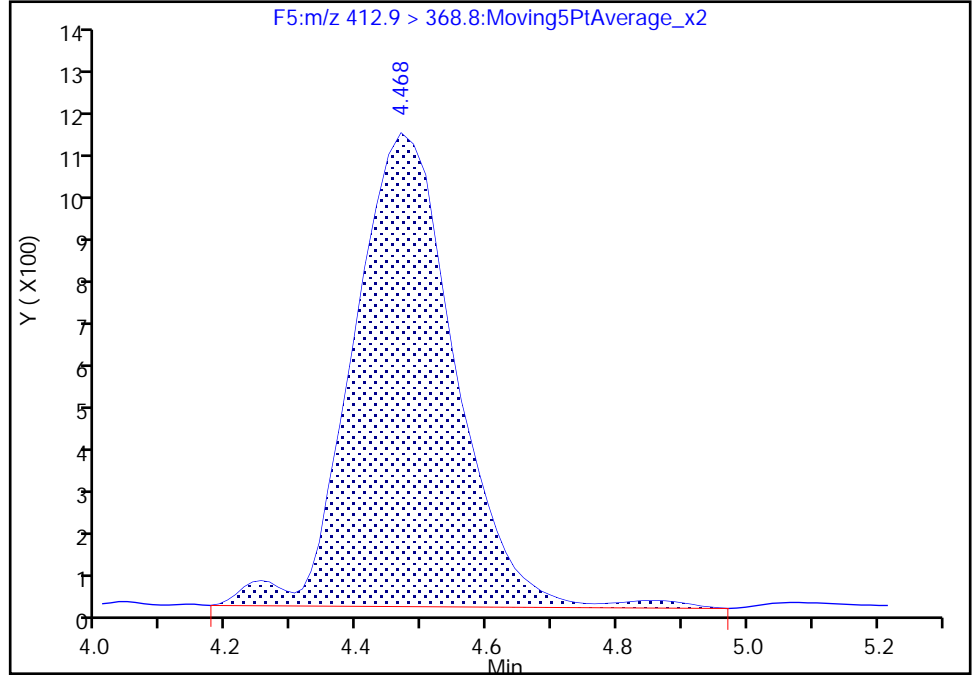
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

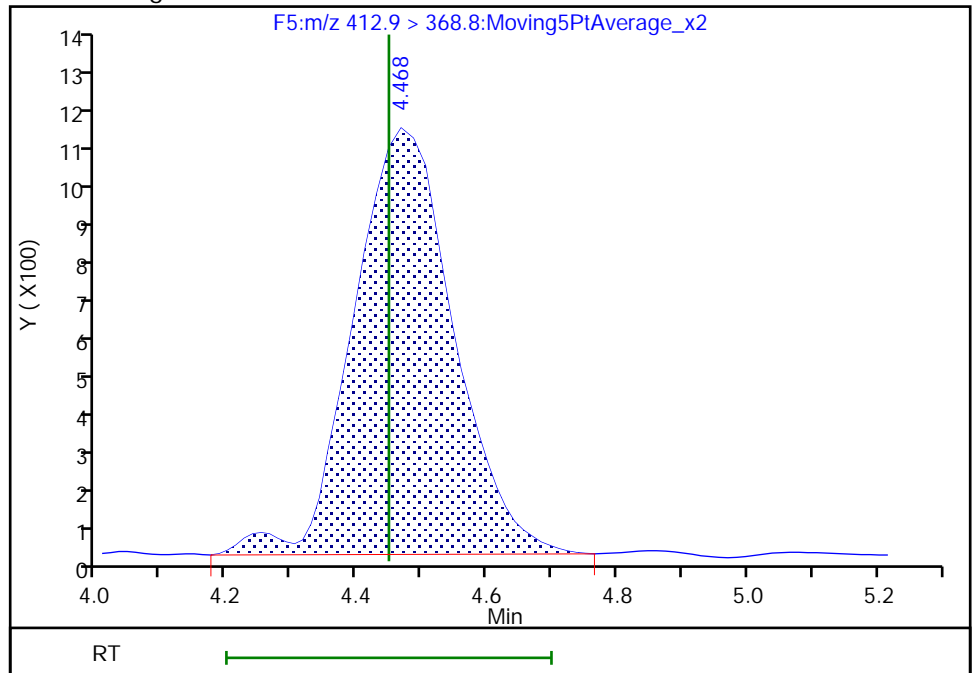
RT: 4.47
Area: 12010
Amount: 1.249340
Amount Units: ng/ml

Processing Integration Results



RT: 4.47
Area: 11736
Amount: 1.220837
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:27:55
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

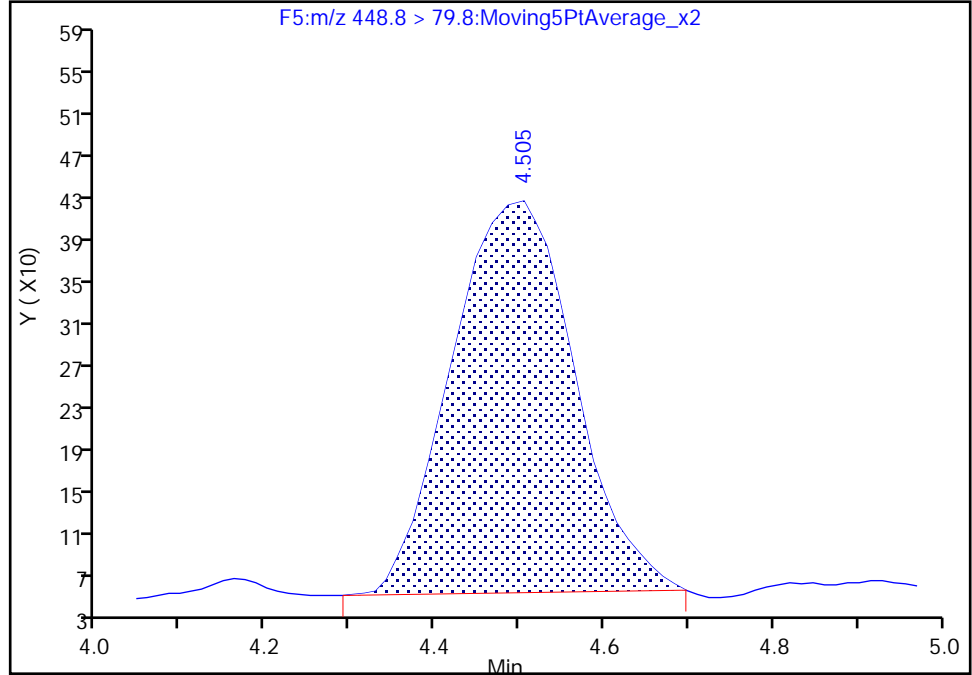
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Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

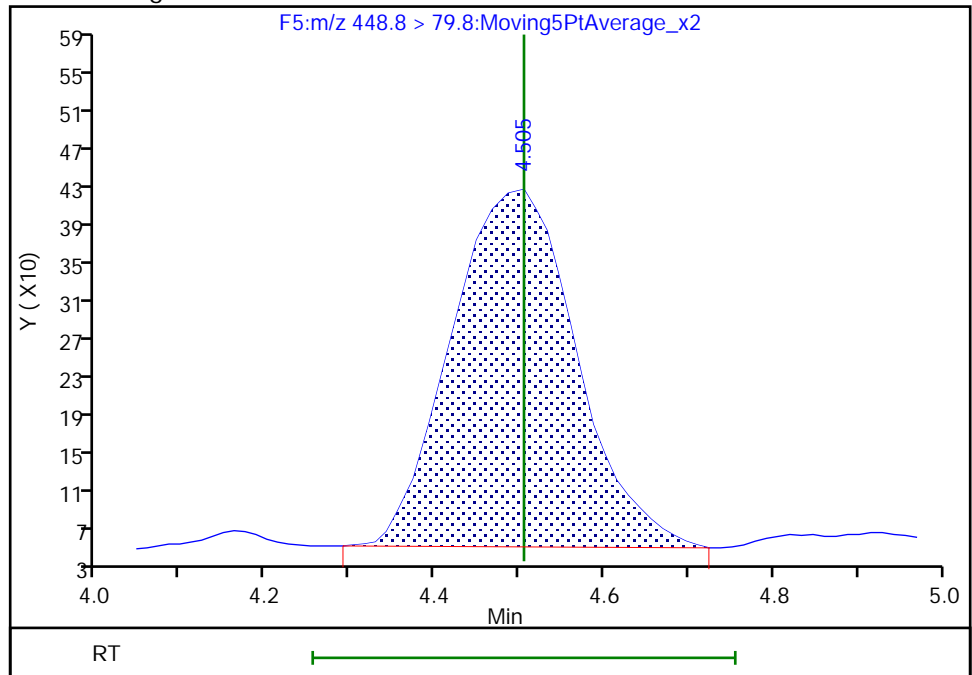
RT: 4.51
Area: 3745
Amount: 0.824683
Amount Units: ng/ml

Processing Integration Results



RT: 4.51
Area: 3834
Amount: 0.844281
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:27:45
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

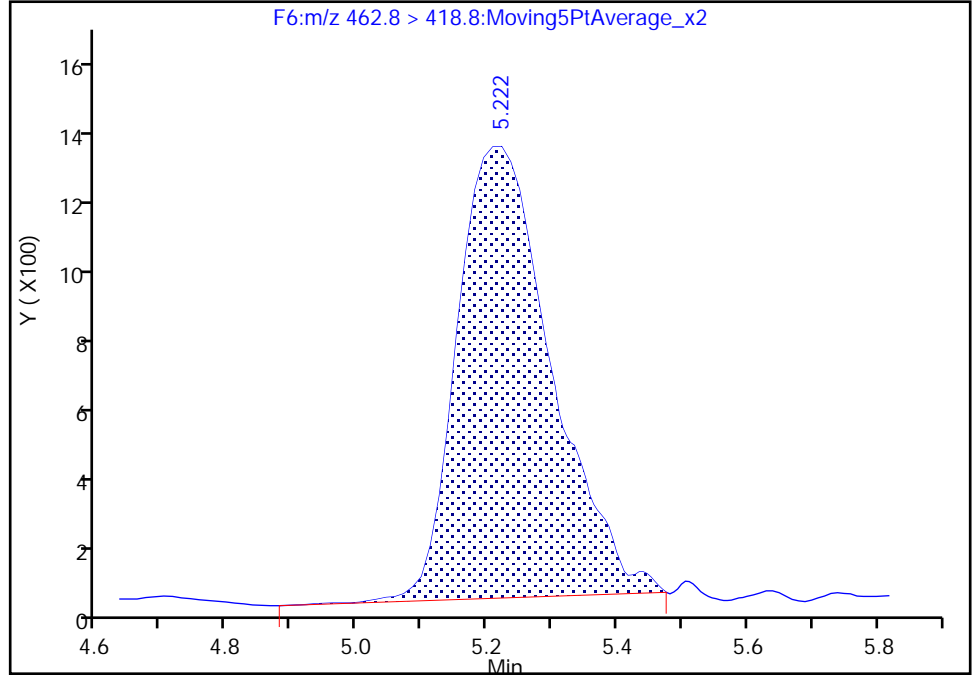
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

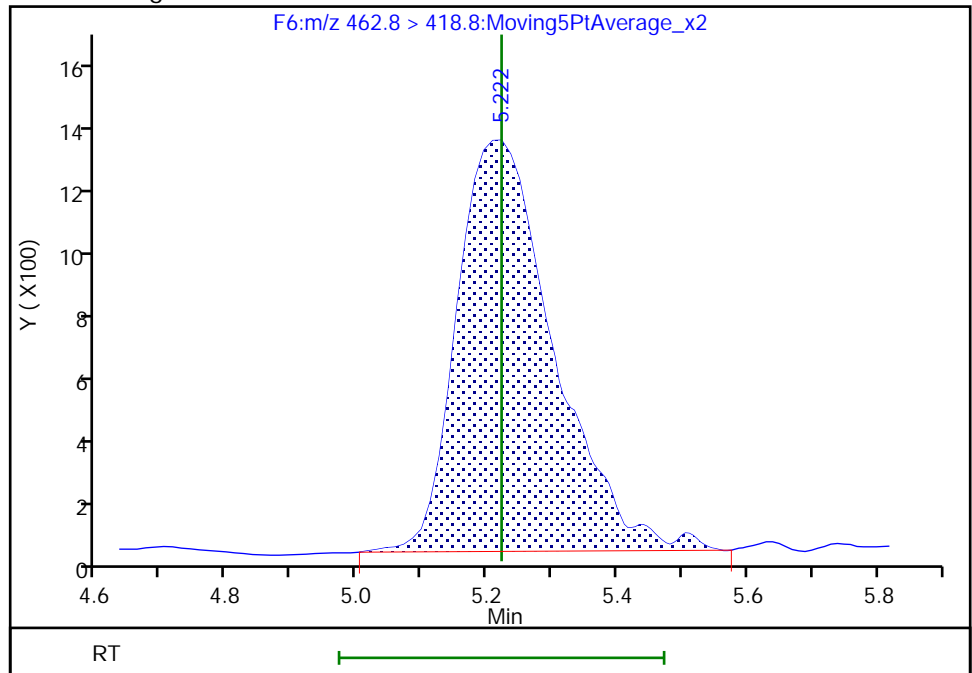
RT: 5.22
Area: 12254
Amount: 0.885364
Amount Units: ng/ml

Processing Integration Results



RT: 5.22
Area: 12668
Amount: 0.915276
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:27:39
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

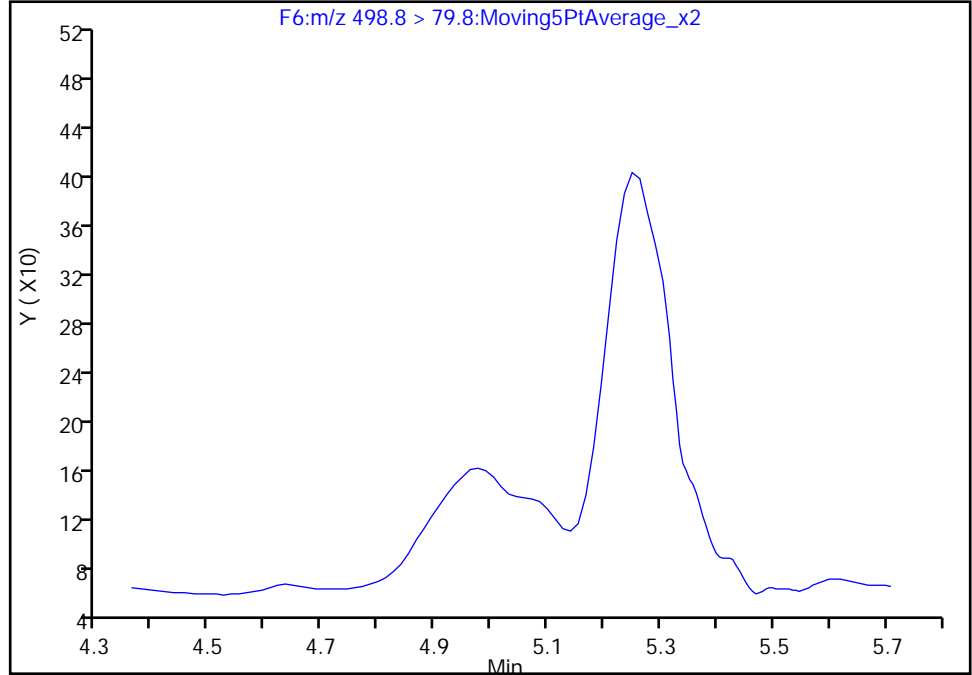
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

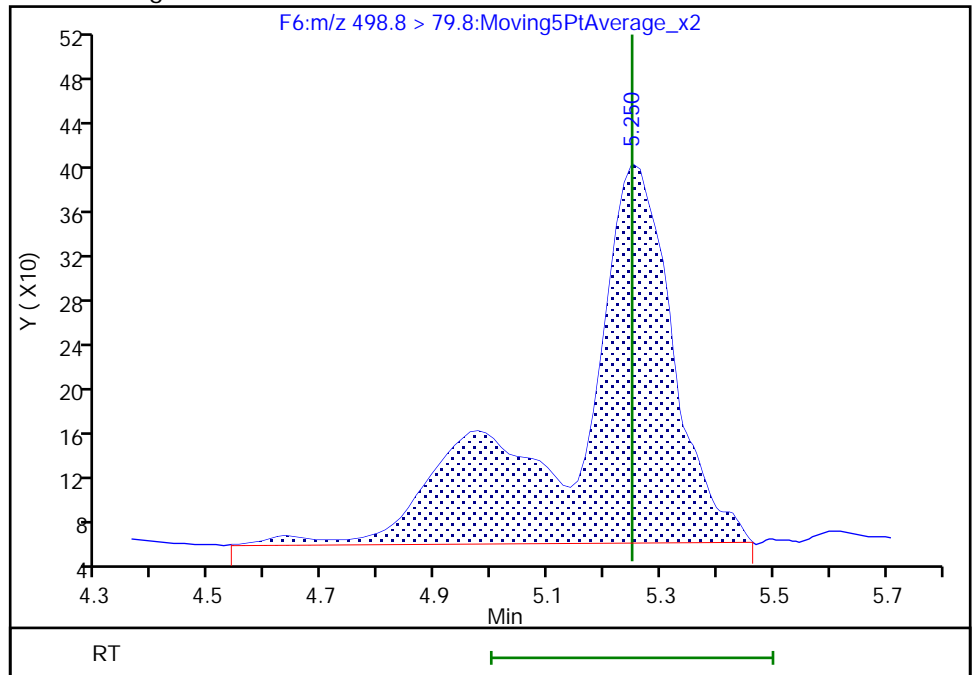
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 5.25
Area: 4337
Amount: 0.882072
Amount Units: ng/ml



Reviewer: chirgwinb, 07-Jan-2019 20:27:09
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

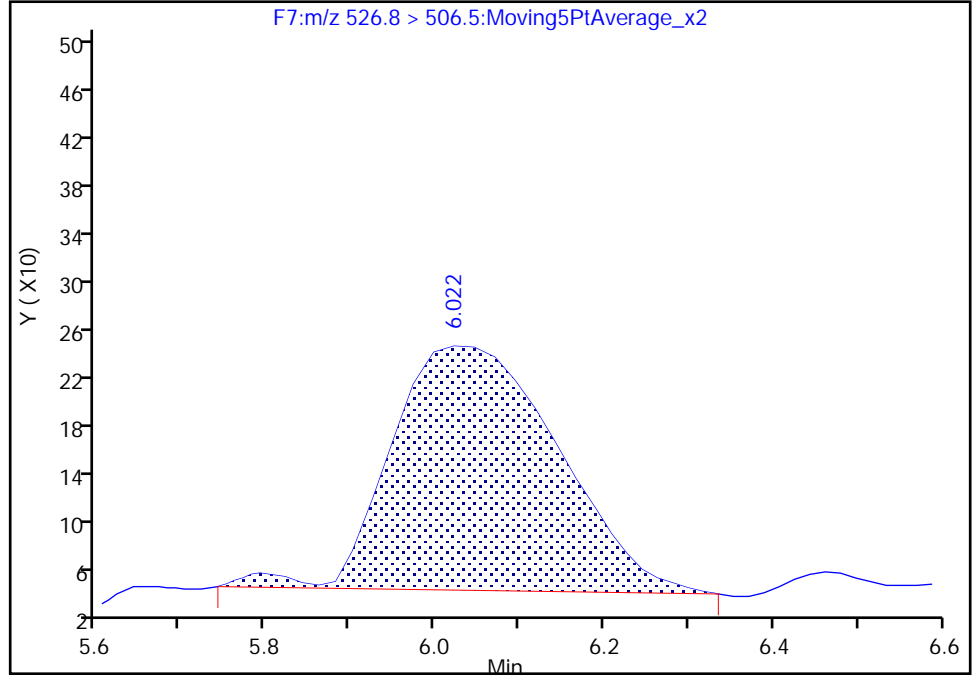
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

23 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

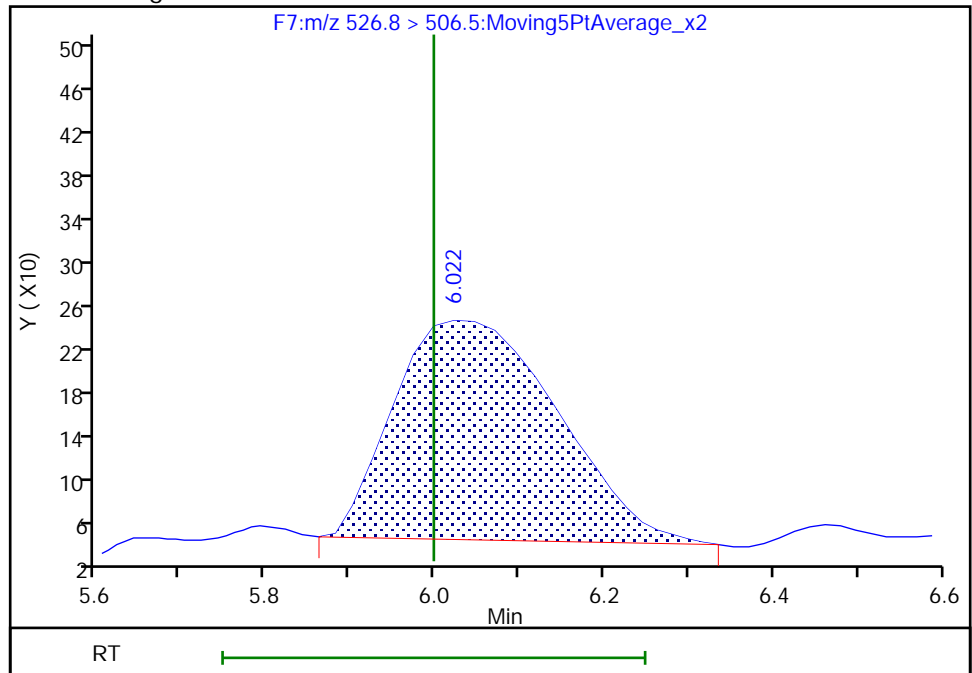
RT: 6.02
Area: 2733
Amount: 1.070834
Amount Units: ng/ml

Processing Integration Results



RT: 6.02
Area: 2654
Amount: 1.039881
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 07-Jan-2019 20:26:53
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington

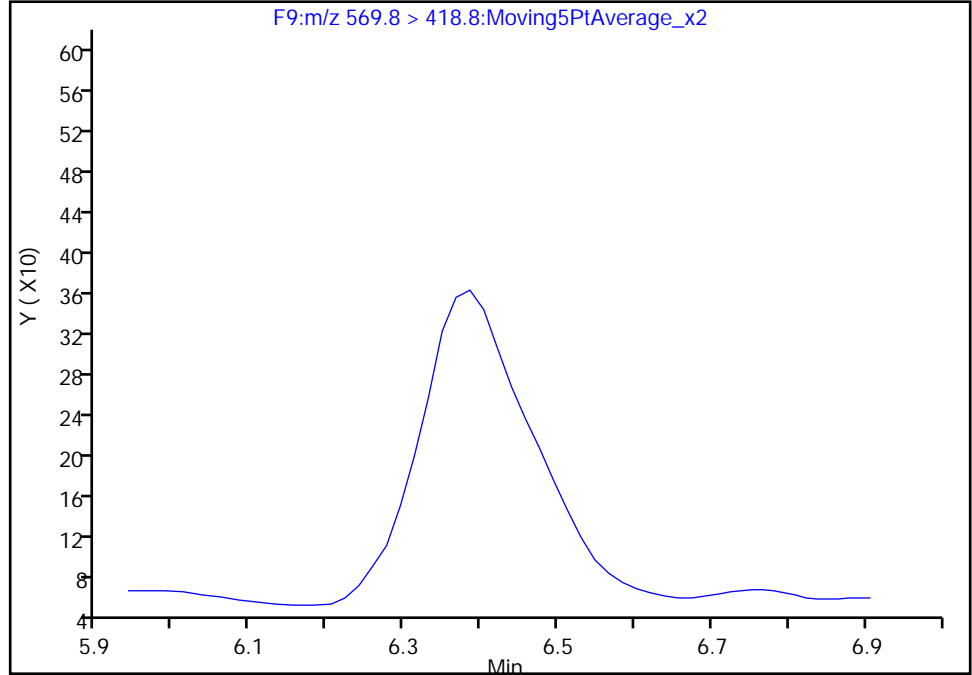
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

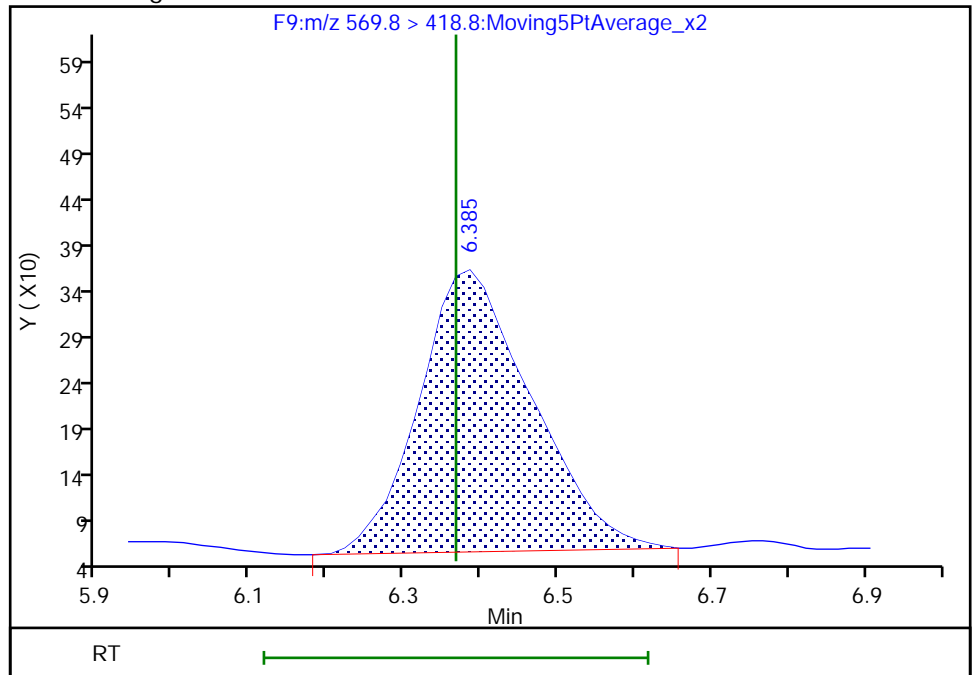
Not Detected
Expected RT: 6.37

Processing Integration Results



Manual Integration Results

RT: 6.39
Area: 3084
Amount: 0.993242
Amount Units: ng/ml



Reviewer: chirgwinb, 07-Jan-2019 20:27:25
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

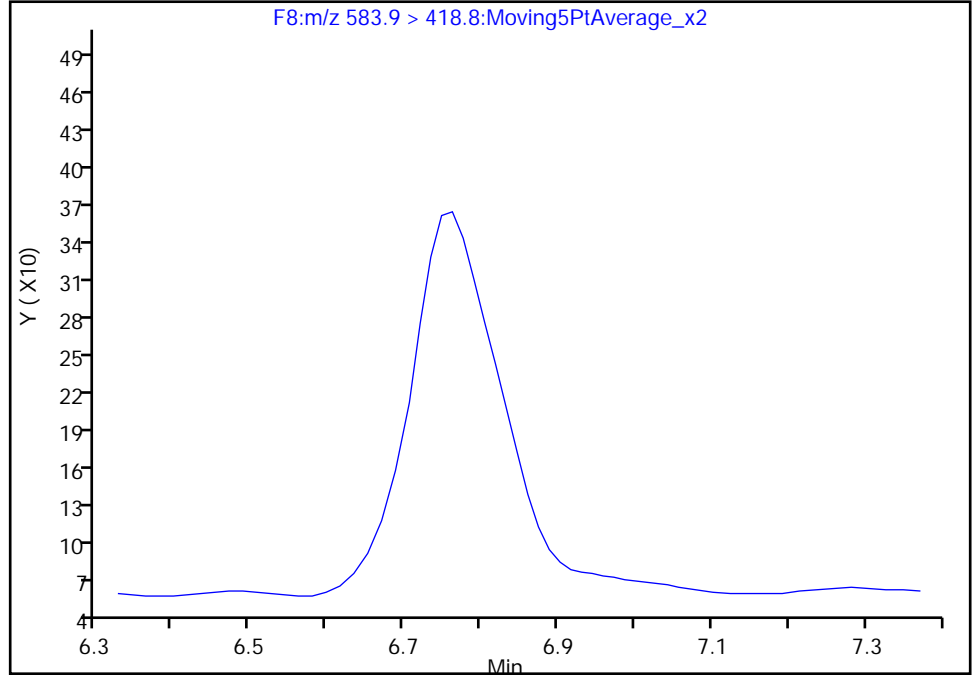
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

30 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

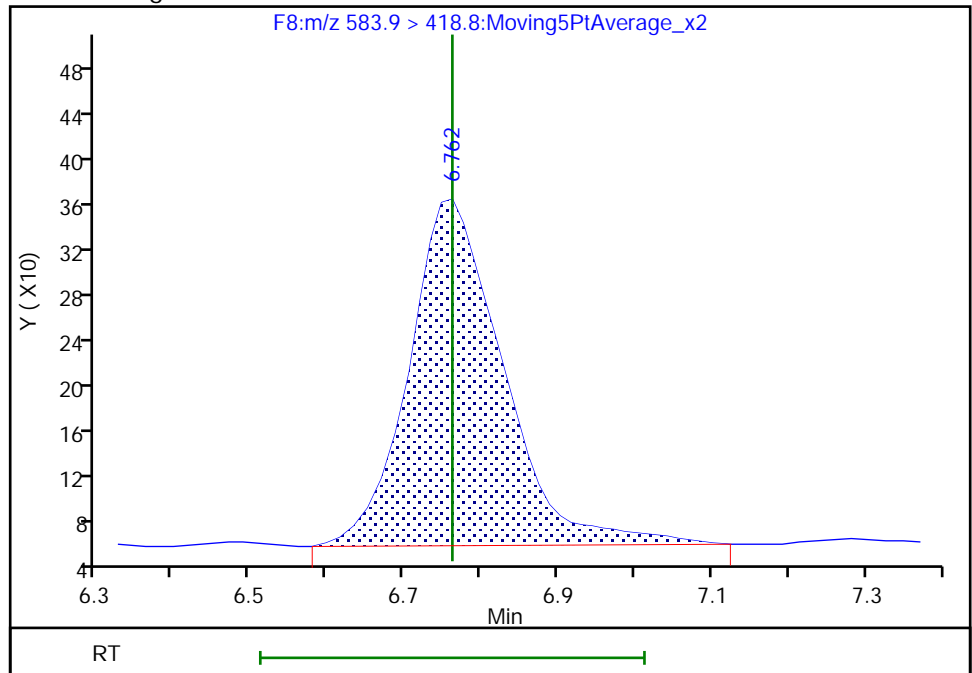
Not Detected
Expected RT: 6.76

Processing Integration Results



Manual Integration Results

RT: 6.76
Area: 2600
Amount: 0.957662
Amount Units: ng/ml



Reviewer: chirgwinb, 07-Jan-2019 20:27:19
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

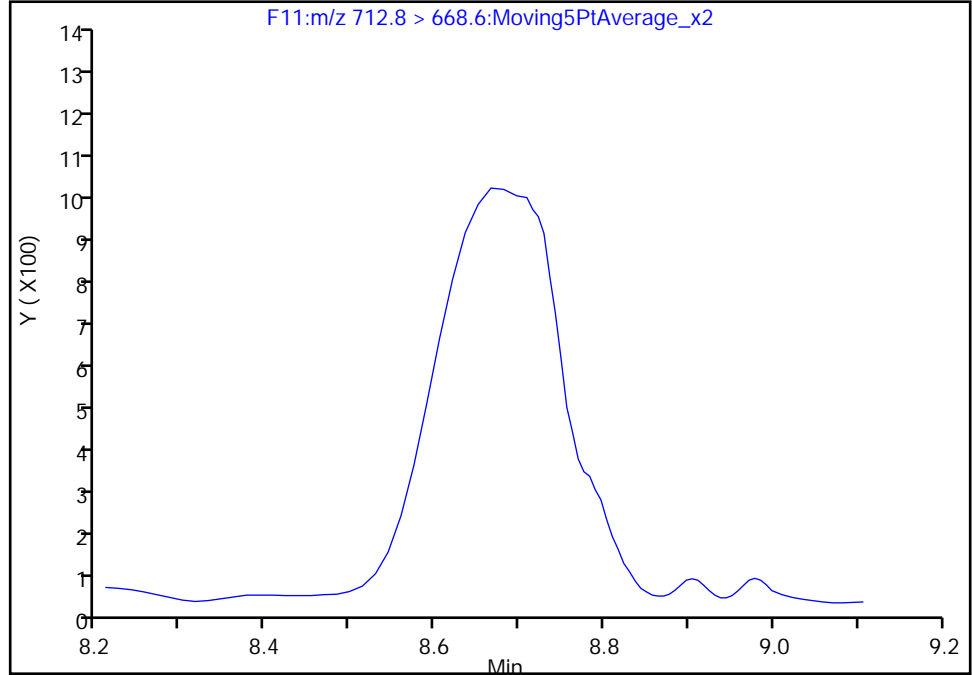
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

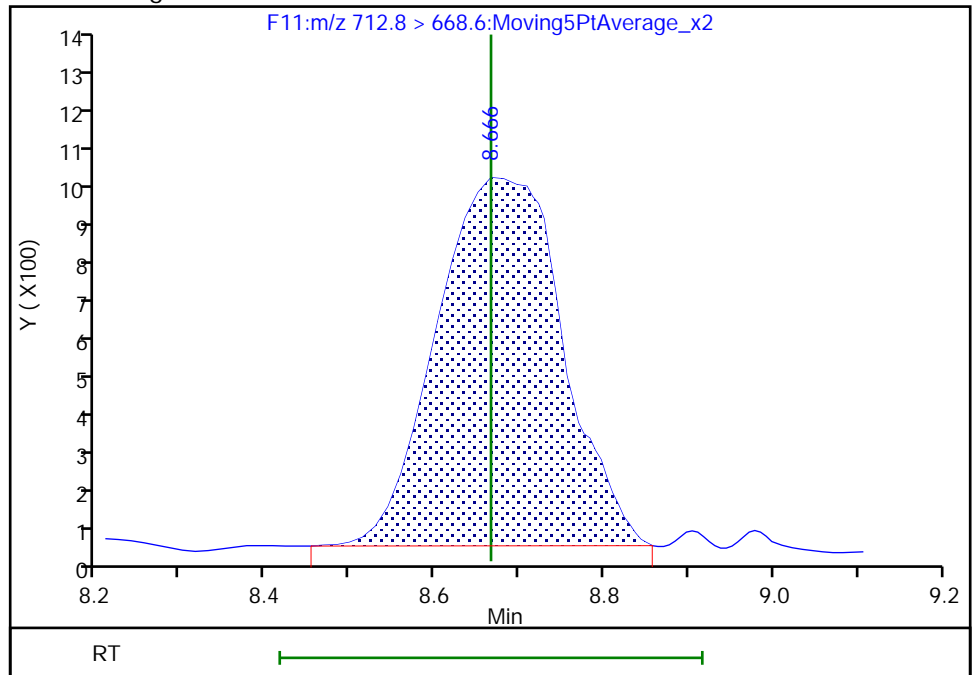
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.67
Area: 9299
Amount: 0.710505
Amount Units: ng/ml



Reviewer: chirgwinb, 07-Jan-2019 20:26:25
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

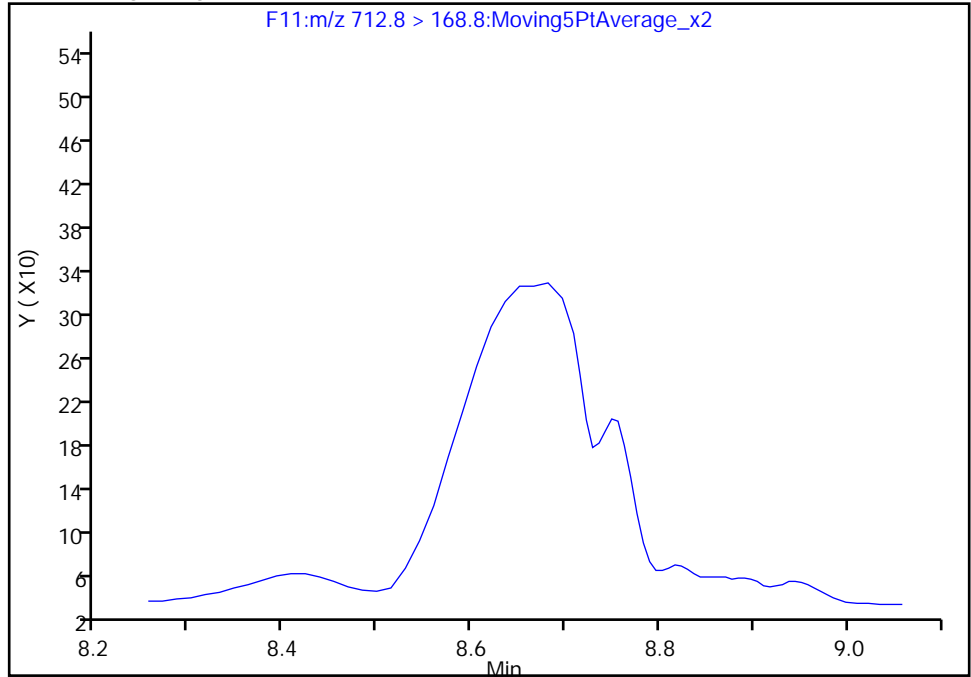
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

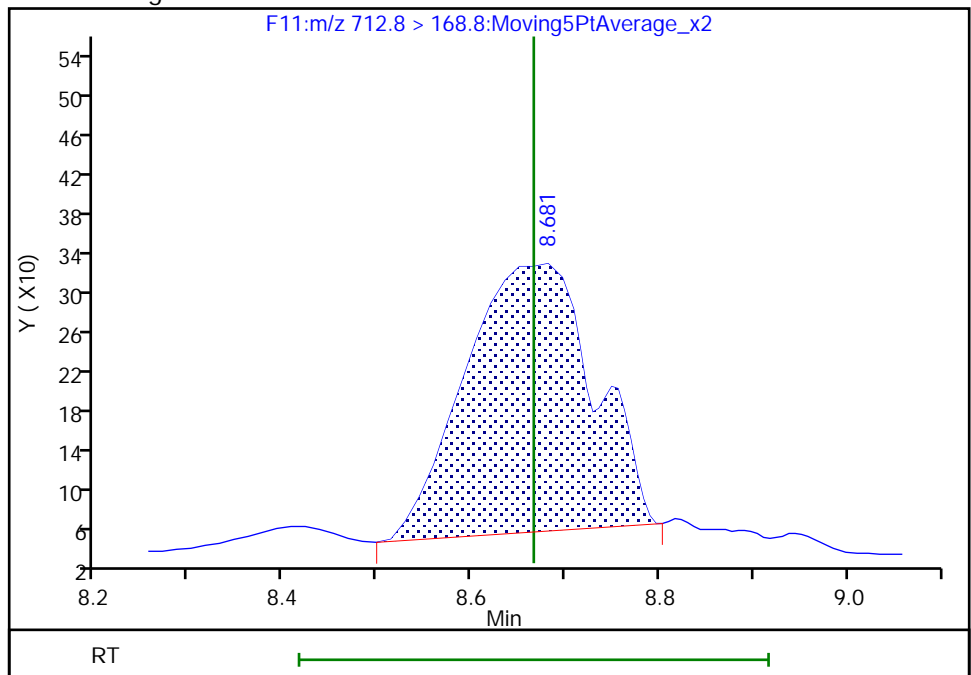
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.68
Area: 2584
Amount: 0.710505
Amount Units: ng/ml



Reviewer: chirgwinb, 07-Jan-2019 20:26:29

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Burlington

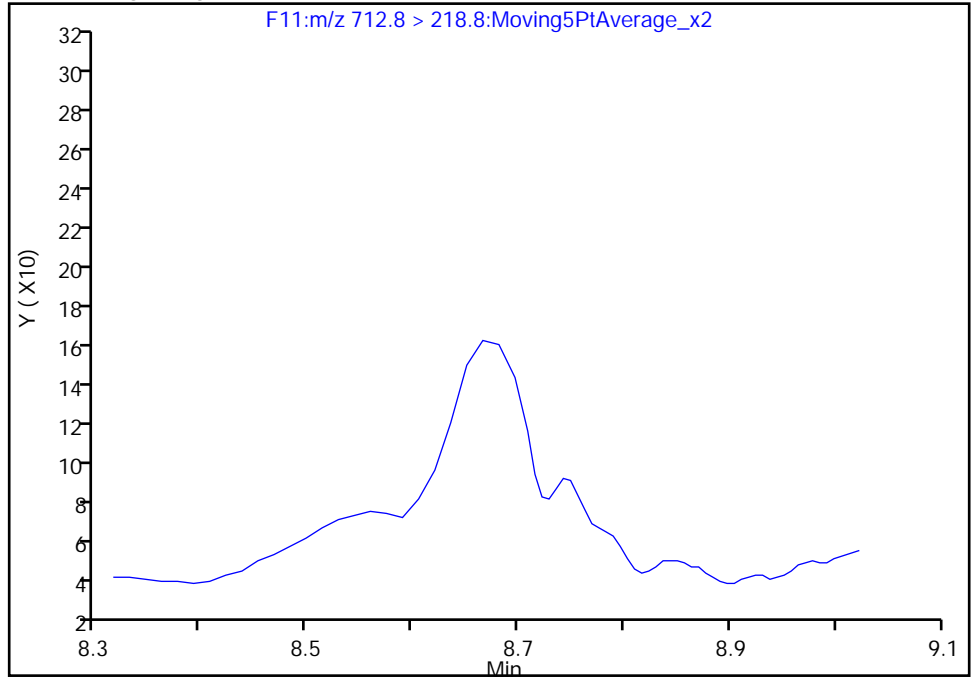
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A07.d
Injection Date: 07-Jan-2019 18:48:01 Instrument ID: LC410
Lims ID: CCVL
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:MRM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

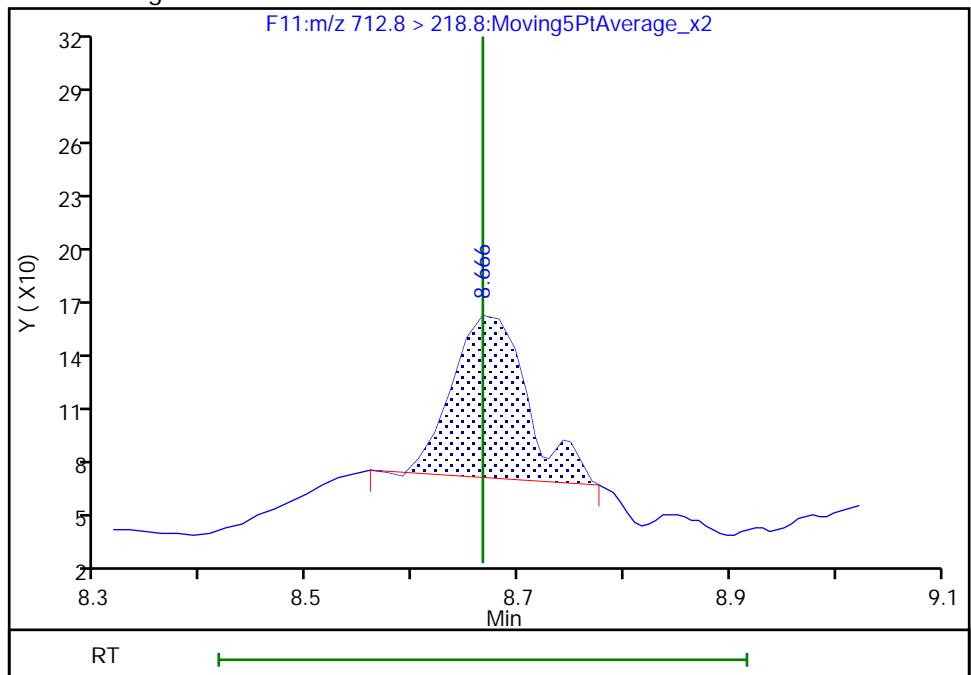
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.67
Area: 429
Amount: 0.710505
Amount Units: ng/ml



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCV 200-138864/56 Calibration Date: 01/08/2019 07:47
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A56.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L1ID		0.9525		56000	50000	12.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	2.848	2.493		43800	50000	-12.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.745	1.417		40600	50000	-18.8	40.0
Perfluorohexanoic acid (PFHxA)	AveID	1.038	1.051		50700	50000	1.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9775	1.147		58700	50000	17.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	L1ID		1.210		39500	50000	-21.0	40.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.9845	1.056		53600	50000	7.3	40.0
Perfluorooctanoic acid (PFOA)	AveID	0.9899	1.117		56400	50000	12.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9547	0.9095		47600	50000	-4.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.099	0.996		45300	50000	-9.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.034	1.093		52900	50000	5.7	40.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.8068	0.8199		50800	50000	1.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.009	1.026		50800	50000	1.6	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.086	0.8552		39400	50000	-21.2	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9627	0.7645		39700	50000	-20.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	1.046	1.065		50900	50000	1.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.026	1.160		56500	50000	13.1	40.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.8462	0.9561		56500	50000	13.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8584	0.9774		56900	50000	13.9	40.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.9775	1.226		62700	50000	25.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.9748	1.019		52300	50000	4.5	40.0
13C4 PFBA	Ave	0.5875	0.6121		52100	50000	4.2	50.0
13C5 PFPeA	Ave	0.3725	0.4776		64100	50000	28.2	50.0
13C3 PFBS	Ave	0.3075	0.4138		62600	46500	34.6	50.0
13C2 PFHxA	Ave	0.6710	0.6754		50300	50000	0.6	50.0
13C4 PFHpA	Ave	1.229	1.148		46700	50000	-6.6	50.0
18O2 PFHxS	Ave	0.3555	0.4303		57300	47300	21.0	50.0
M2-6:2 FTS	Ave	0.1097	0.1508		65300	47500	37.5	50.0
13C4 PFOA	Ave	0.9383	0.8733		46500	50000	-6.9	50.0
13C5 PFNA	Ave	1.265	1.231		48600	50000	-2.8	50.0
13C4 PFOS	Ave	0.3148	0.4038		61300	47800	28.3	50.0
M2-8:2 FTS	Ave	0.2971	0.3411		55000	47900	14.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCV 200-138864/56 Calibration Date: 01/08/2019 07:47
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A56.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFDA	Ave	1.305	1.293		49600	50000	-0.9	50.0
d3-NMeFOSAA	Ave	0.3333	0.3287		49300	50000	-1.4	50.0
d5-NEtFOSAA	Ave	0.2828	0.2810		49700	50000	-0.7	50.0
13C2 PFUnA	Ave	1.358	1.216		44800	50000	-10.4	50.0
13C8 FOSA	Ave	0.6063	0.7516		62000	50000	24.0	50.0
13C2 PFDoA	Ave	1.718	1.556		45300	50000	-9.5	50.0
13C2 PFTeDA	Ave	1.577	1.226		38900	50000	-22.2	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A56.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-Jan-2019 07:47:03 ALS Bottle#: 0 Worklist Smp#: 56
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-056 CCV 5
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 08-Jan-2019 16:06:40 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0327
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 09:18:42
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.392	2.402	-0.010	1.000	330649	52.1	104	271	
2 Perfluorobutanoic acid	212.9 > 168.9	2.392	2.402	-0.010	1.000	314941	56.0	112	220	
D 3 13C5 PFPeA	267.7 > 222.6	2.801	2.818	-0.017	1.000	258029	64.1	128	1820	
4 Perfluoropentanoic acid	262.9 > 218.8	2.801	2.818	-0.017	1.000	643235	43.8	87.5	605	
D 6 13C3 PFBS	302.0 > 79.8	2.883	2.900	-0.017	1.000	207885	62.6	135	706	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.883	2.900	-0.017	1.000	316799	40.6	81.2	2761	
D 7 13C2 PFHxA	314.8 > 269.6	3.214	3.250	-0.036	1.000	364844	50.3	101	471	
8 Perfluorohexanoic acid	312.8 > 268.6	3.214	3.250	-0.036	1.000	383550	50.7	101	918	
D 9 13C4 PFHpA	366.9 > 321.8	3.726	3.782	-0.056	1.000	620355	46.7	93.4	641	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.726	3.782	-0.056	1.000	711570	58.7	117	561	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.770	3.815	-0.045	1.000	281240	39.5	79.0	362	
D 11 18O2 PFHxS	402.9 > 83.8	3.770	3.826	-0.056	1.000	219924	57.3	121	2080	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.411	-0.081	1.000	77383	65.3	137	524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.411	-0.081	1.000	86048	53.6	107	1576	
16 Perfluorooctanoic acid	412.9 > 368.8	4.393	4.449	-0.056	1.004	527111	56.4	113	619	
D 17 13C4 PFOA	416.9 > 371.8	4.374	4.468	-0.094	1.000	471751	46.5	93.1	1027	
* 15 13C2 PFOA	414.9 > 369.8	4.393	4.468	-0.075		540224	50.0		1476	S
18 Perfluoroheptanesulfonic acid	448.8 > 79.8	4.412	4.505	-0.093	0.854	198390	47.6	95.3	475	
D 20 13C5 PFNA	467.8 > 422.8	5.140	5.222	-0.082	1.000	664803	48.6	97.2	929	
19 Perfluorononanoic acid	462.8 > 418.8	5.140	5.222	-0.082	1.000	661860	45.3	90.6	478	
D 22 13C4 PFOS	502.8 > 79.8	5.168	5.236	-0.068	1.000	208535	61.3	128	1050	
21 Perfluorooctanesulfonic acid	498.8 > 79.8	5.154	5.250	-0.096	0.997	238385	52.9	106	519	M M
D 24 M2-8:2 FTS	528.8 > 508.8	5.882	5.998	-0.116	1.000	176534	55.0	115	422	
23 1H,1H,2H,2H-perfluorodecanesulfoni	526.8 > 506.5	5.882	5.998	-0.116	1.000	151085	50.8	102	690	
D 26 13C2 PFDA	514.9 > 469.5	5.902	6.022	-0.120	1.000	698649	49.6	99.1	1171	
25 Perfluorodecanoic acid	512.9 > 468.5	5.902	6.022	-0.120	1.000	716912	50.8	102	4539	
28 N-methylperfluorooctanesulfonamido	569.8 > 418.8	6.277	6.367	-0.090	1.003	151847	39.4	78.8	97.4	
D 27 d3-NMeFOSAA	572.8 > 418.8	6.259	6.367	-0.108	1.000	177552	49.3	98.6	821	
D 29 d5-NEtFOSAA	588.9 > 418.8	6.634	6.734	-0.100	1.000	151780	49.7	99.3	1019	
30 N-ethylperfluorooctanesulfonamidoa	583.9 > 418.8	6.652	6.762	-0.110	1.003	116032	39.7	79.4	33.6	
31 Perfluorodecanesulfonic acid	598.8 > 79.8	6.670	6.762	-0.092	1.291	232414	50.9	102	3847	
D 32 13C2 PFUnA	564.8 > 519.8	6.670	6.777	-0.107	1.000	657074	44.8	89.6	1697	
33 Perfluoroundecanoic acid	562.8 > 518.6	6.670	6.777	-0.107	1.000	762210	56.5	113	2580	
D 35 13C8 FOSA	505.8 > 77.8	6.931	6.945	-0.014	1.000	406018	62.0	124	2914	
34 Perfluorooctanesulfonamide	497.8 > 77.8	6.931	6.959	-0.028	1.000	388190	56.5	113	2227	
D 37 13C2 PFDoA	614.8 > 569.6	7.362	7.474	-0.112	1.000	840541	45.3	90.5	2626	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluorododecanoic acid	612.8 > 568.6	7.362	7.474	-0.112	1.000	821575	56.9	114	1477	
38 Perfluorotridecanoic acid	662.8 > 618.6	7.987	8.097	-0.110	0.936	812564	62.7	125	2417	
39 Perfluorotetradecanoic acid	712.8 > 668.6	8.529	8.666	-0.137	1.000	674986	52.3	Target=1.00	105	4720
	712.8 > 168.8	8.544	8.666	-0.122	1.002	134148		5.03(0.90-1.10)		596
	712.8 > 218.8	8.544	8.666	-0.122	1.002	88802		7.60(0.90-1.10)		521
D 40 13C2 PFTeDA	714.8 > 669.6	8.529	8.681	-0.152	1.000	662535	38.9	77.8	691	

QC Flag Legend

Processing Flags

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L5_00001

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A56.d

Injection Date: 08-Jan-2019 07:47:03

Instrument ID: LC410

Lims ID: CCV L5

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 56

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

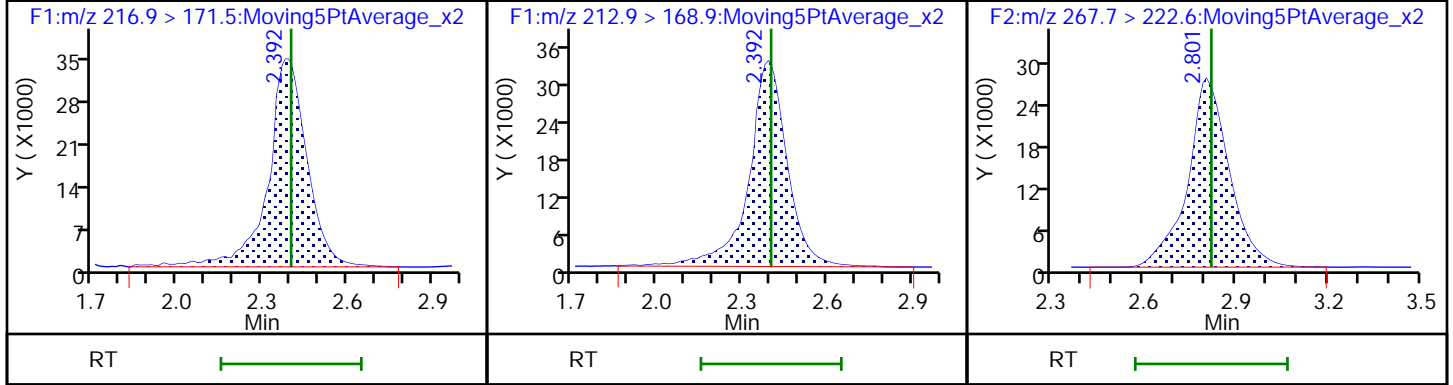
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

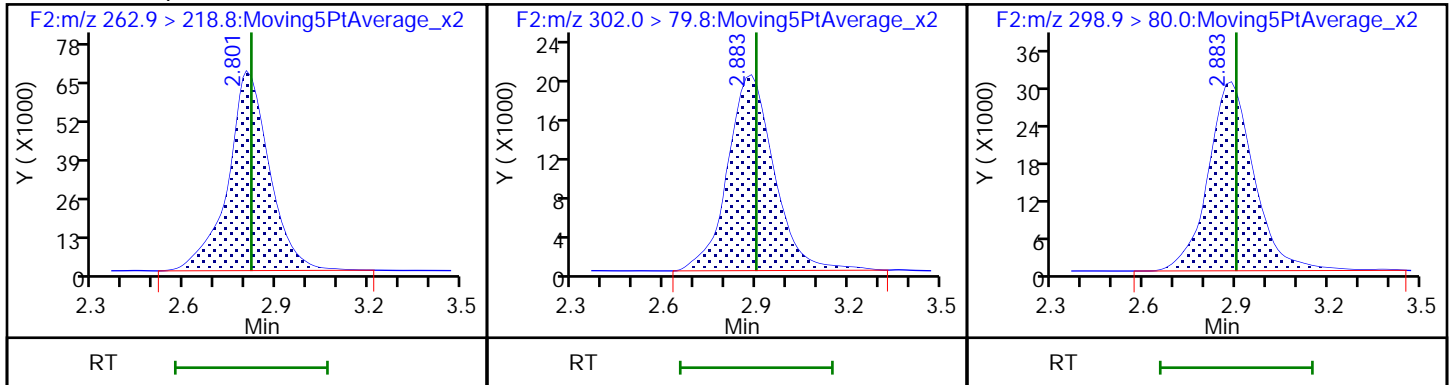
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 6 13C3 PFBS

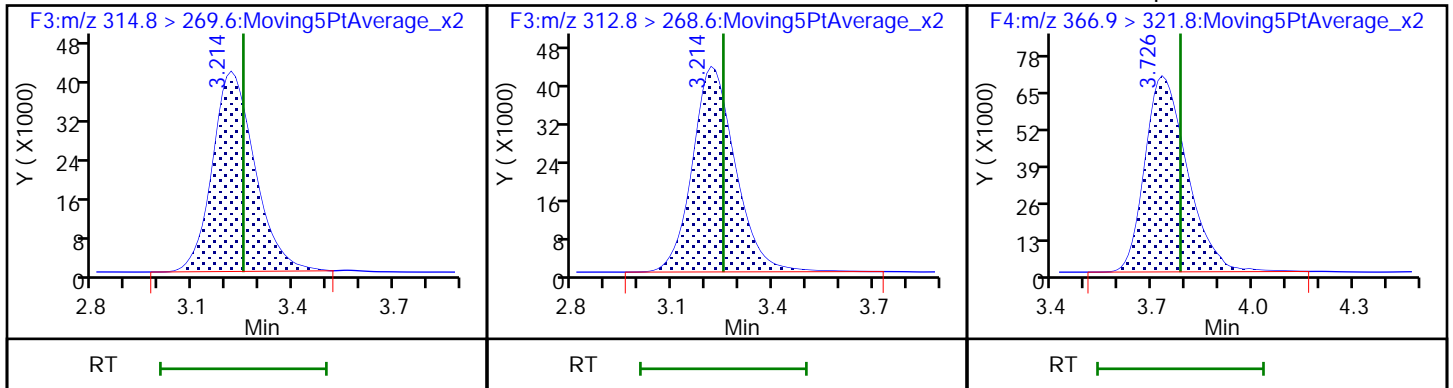
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

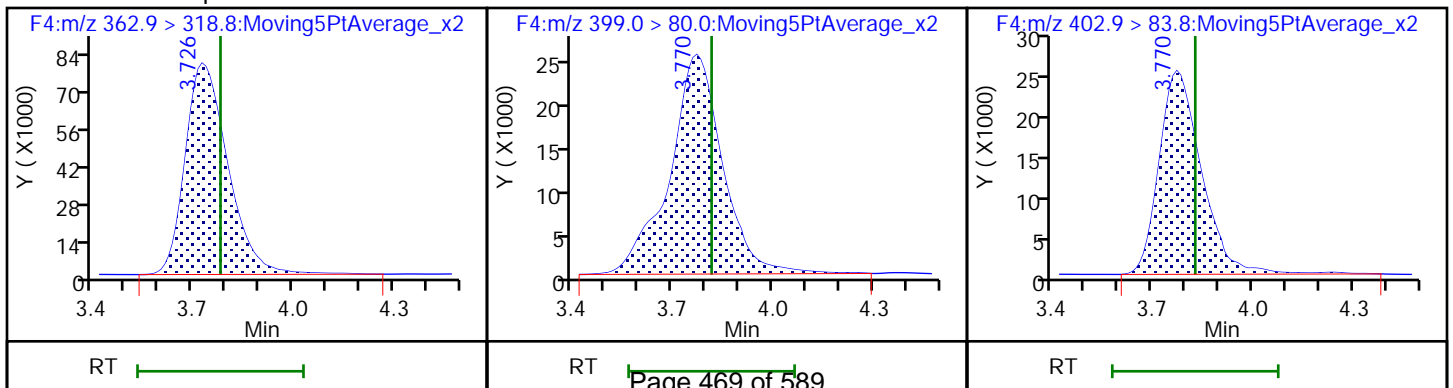
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

12 Perfluorohexanesulfonic acid

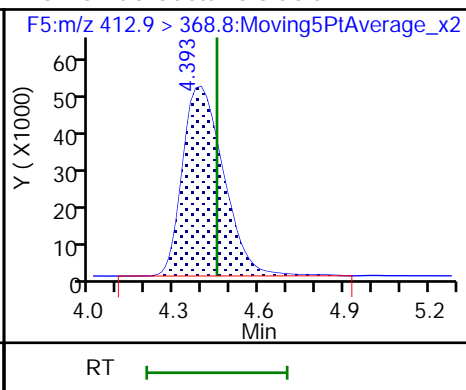
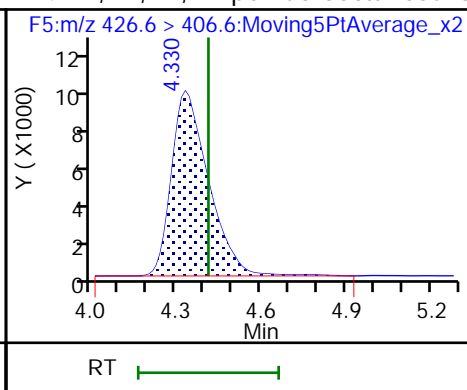
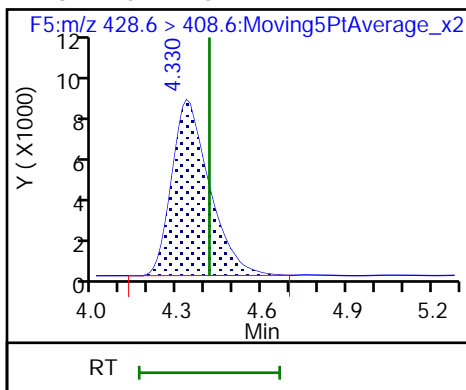
D 11 18O2 PFHxS



D 13 M2-6:2 FTS

14 1H,1H,2H,2H-perfluorooctanesulfo

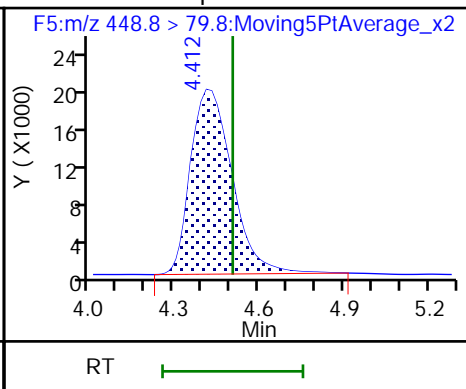
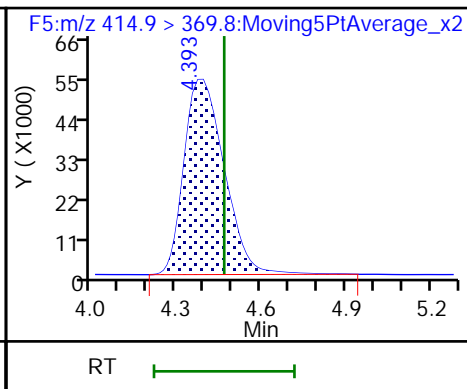
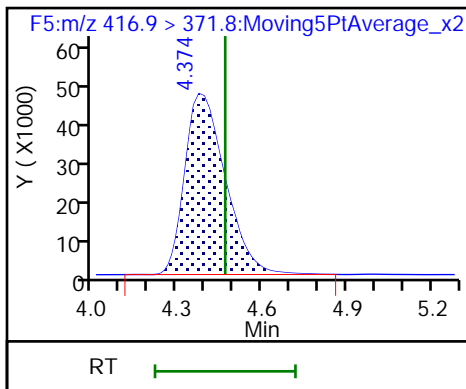
16 Perfluorooctanoic acid



D 17 13C4 PFOA

* 15 13C2 PFOA

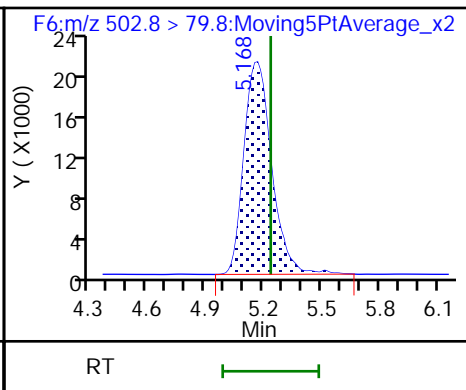
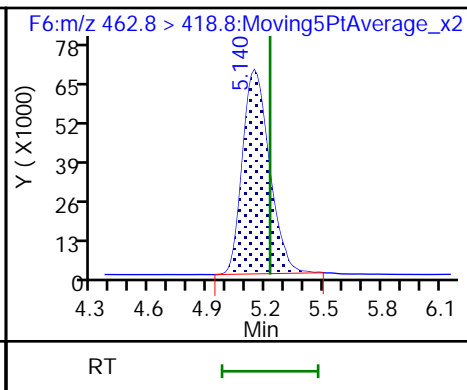
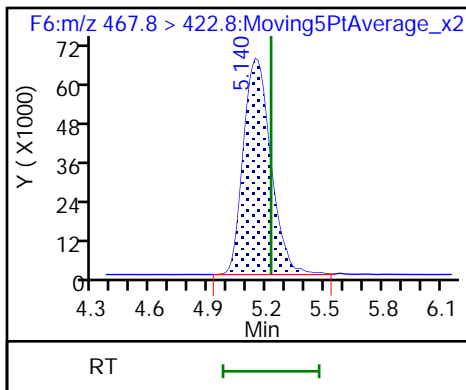
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

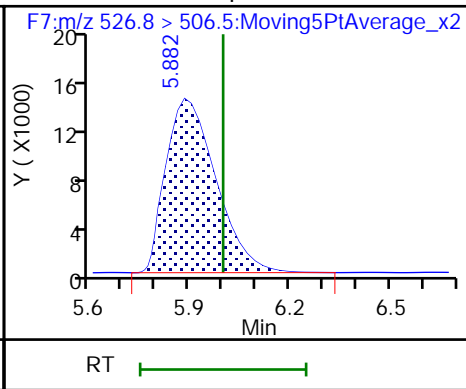
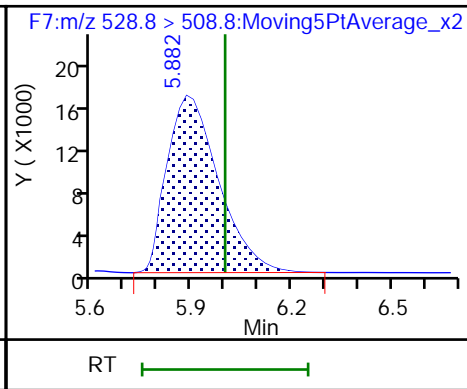
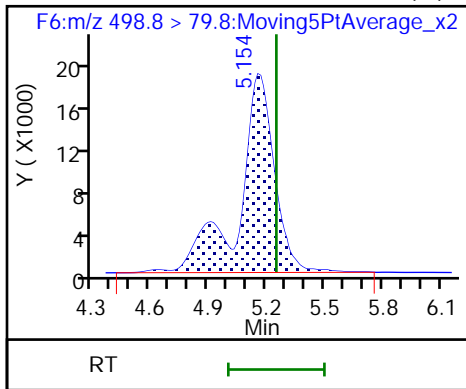
D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid (M)

D 24 M2-8:2 FTS

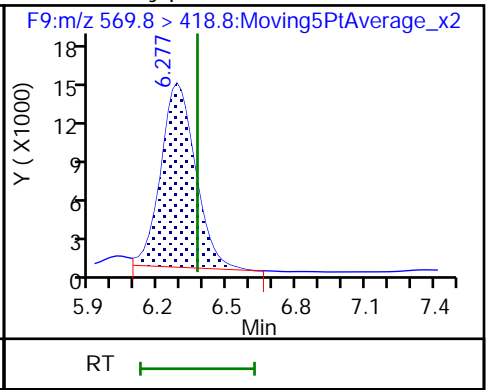
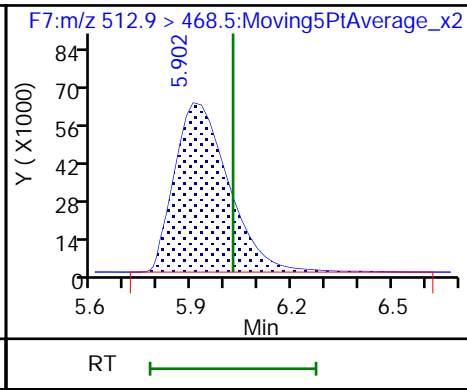
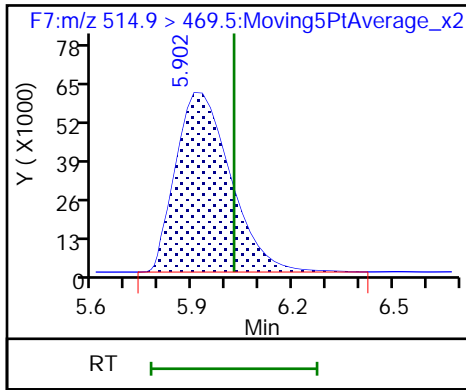
23 1H,1H,2H,2H-perfluorodecanesulfo



D 26 13C2 PFDA

25 Perfluorodecanoic acid

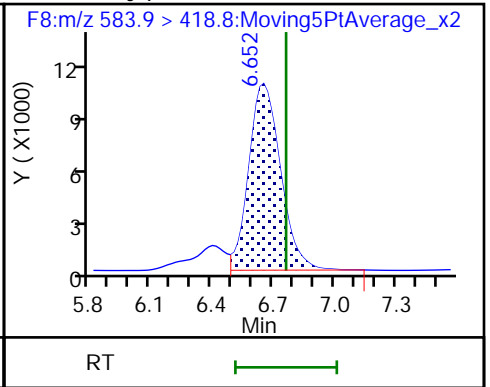
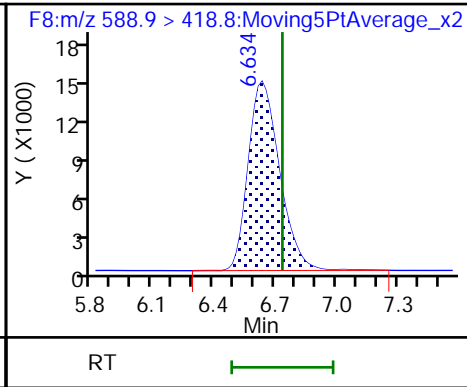
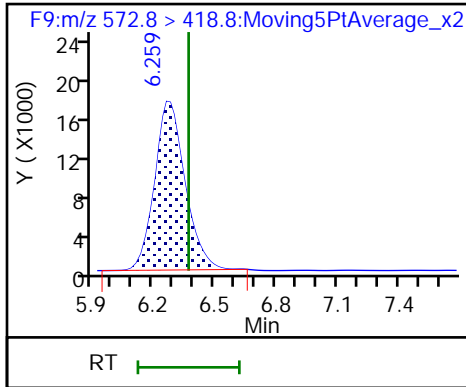
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

D 29 d5-NEtFOSAA

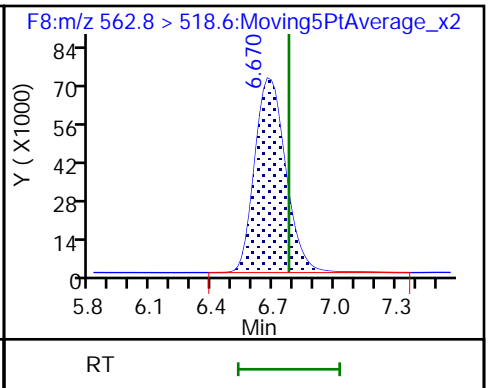
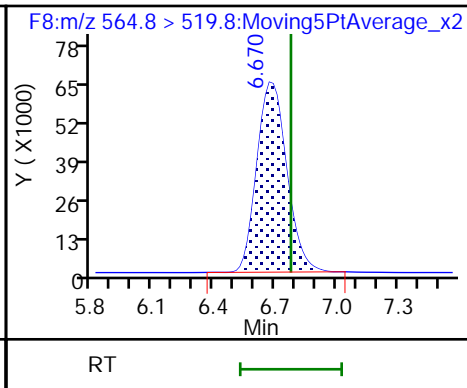
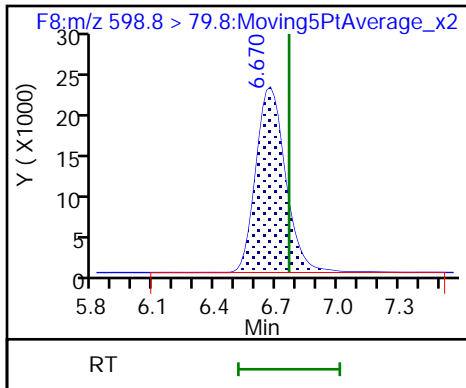
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

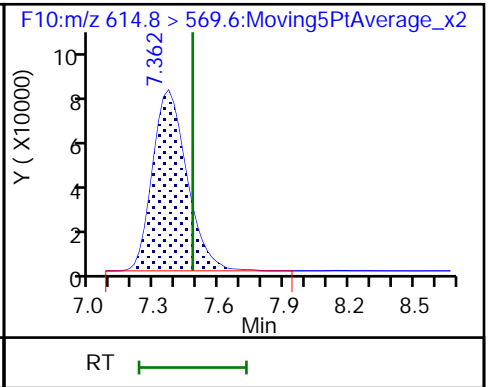
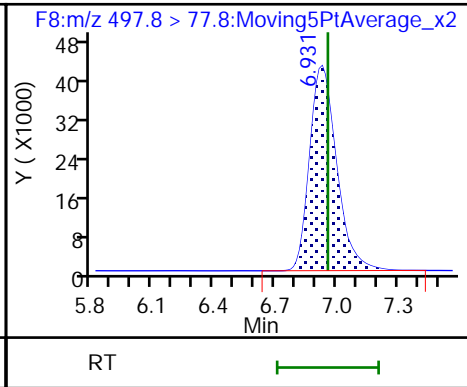
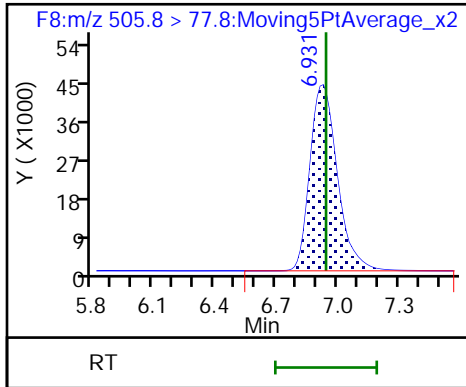
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

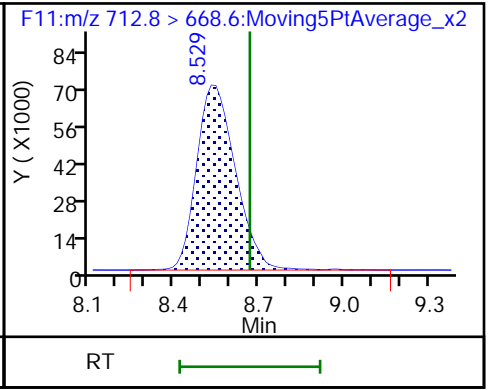
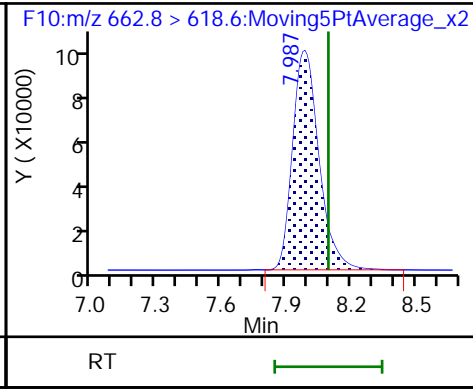
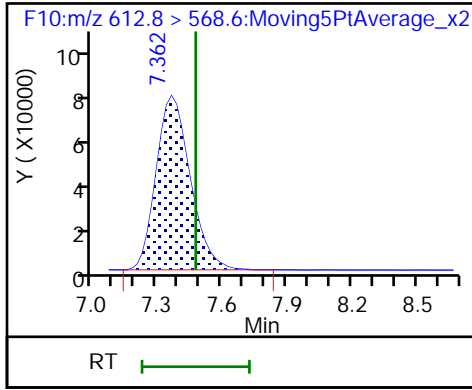
D 37 13C2 PFDoA



36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

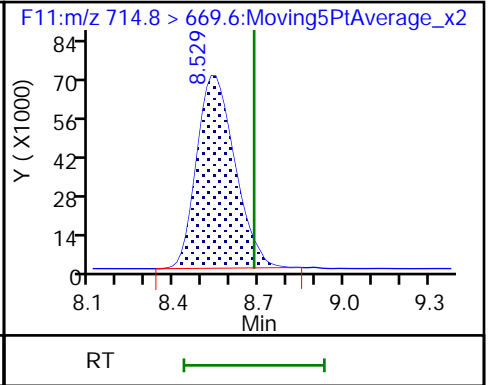
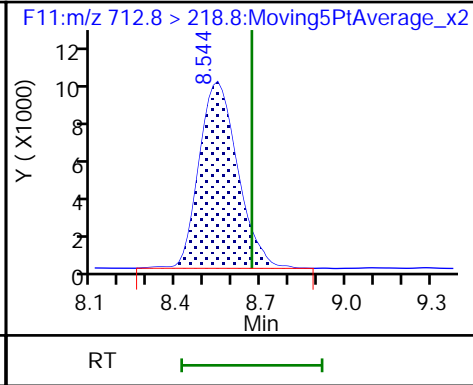
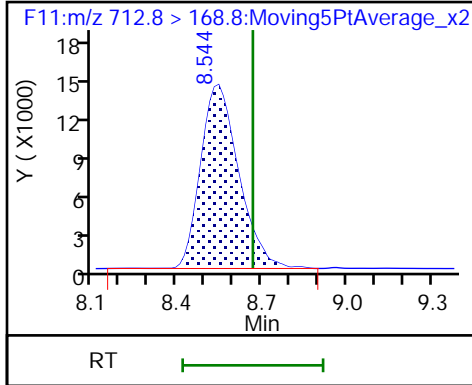
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

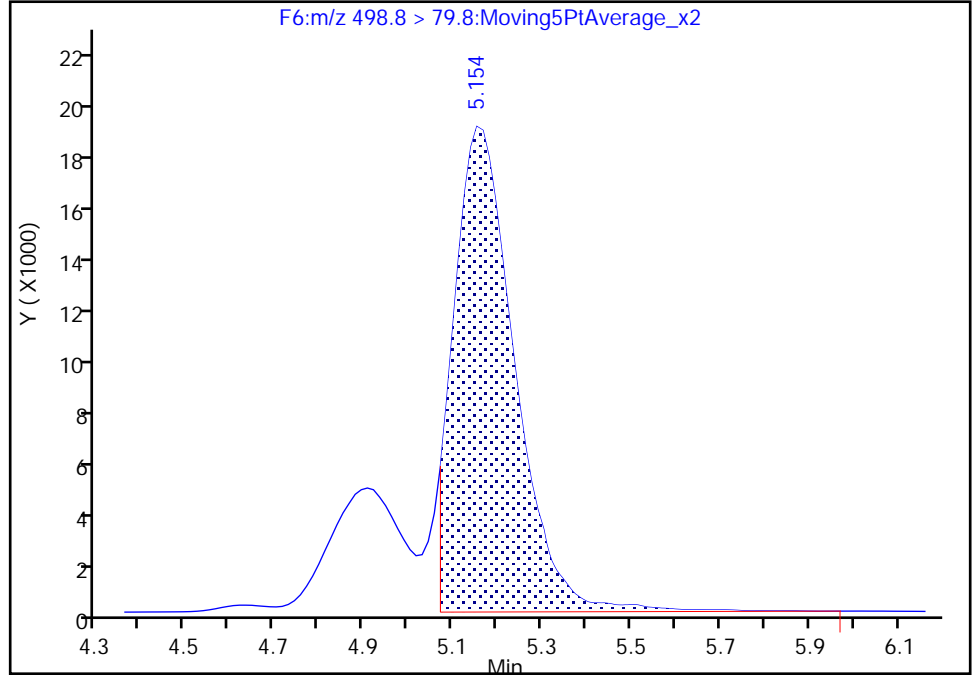
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A56.d
Injection Date: 08-Jan-2019 07:47:03 Instrument ID: LC410
Lims ID: CCV L5
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 56
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

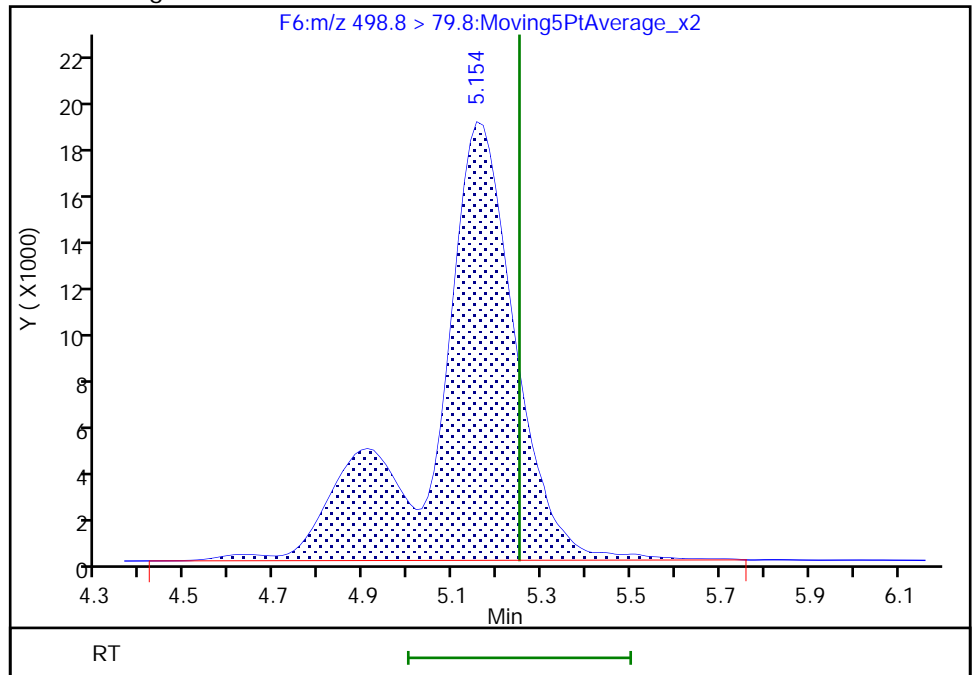
RT: 5.15
Area: 175868
Amount: 38.998153
Amount Units: ng/ml

Processing Integration Results



RT: 5.15
Area: 238385
Amount: 52.861093
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:10:29
Audit Action: Manually Integrated

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCV 200-138864/69 Calibration Date: 01/08/2019 11:13
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A69.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L1ID		0.8644		4910	5000	-1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	2.848	2.498		4390	5000	-12.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.745	1.227		3520	5000	-29.7	40.0
Perfluorohexanoic acid (PFHxA)	AveID	1.038	0.9405		4530	5000	-9.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9775	1.071		5480	5000	9.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	L1ID		1.103		3390	5000	-32.2	40.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.9845	1.146		5820	5000	16.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	0.9899	0.9789		4940	5000	-1.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9547	0.7631		4000	5000	-20.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.099	0.8913		4050	5000	-18.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.034	1.017		4920	5000	-1.6	40.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.8068	0.6730		4170	5000	-16.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.009	0.8114		4020	5000	-19.6	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.086	0.7724		3560	5000	-28.9	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9627	0.8197		4260	5000	-14.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	1.046	0.9653		4610	5000	-7.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.026	1.015		4950	5000	-1.1	40.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.8462	0.9079		5360	5000	7.3	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8584	0.8783		5120	5000	2.3	40.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.9775	1.024		5240	5000	4.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.9748	0.8533		4380	5000	-12.5	40.0
13C4 PFBA	Ave	0.5875	0.5382		45800	50000	-8.4	50.0
13C5 PFPeA	Ave	0.3725	0.3874		52000	50000	4.0	50.0
13C3 PFBS	Ave	0.3075	0.3205		48500	46500	4.2	50.0
13C2 PFHxA	Ave	0.6710	0.6141		45800	50000	-8.5	50.0
13C4 PFHpA	Ave	1.229	1.054		42900	50000	-14.3	50.0
18O2 PFHxS	Ave	0.3555	0.3600		47900	47300	1.3	50.0
M2-6:2 FTS	Ave	0.1097	0.1061		46000	47500	-3.2	50.0
13C4 PFOA	Ave	0.9383	0.8024		42800	50000	-14.5	50.0
13C5 PFNA	Ave	1.265	1.092		43200	50000	-13.7	50.0
13C4 PFOS	Ave	0.3148	0.3225		49000	47800	2.4	50.0
M2-8:2 FTS	Ave	0.2971	0.2899		46700	47900	-2.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCV 200-138864/69 Calibration Date: 01/08/2019 11:13
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A69.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFDA	Ave	1.305	1.263		48400	50000	-3.2	50.0
d3-NMeFOSAA	Ave	0.3333	0.2620		39300	50000	-21.4	50.0
d5-NEtFOSAA	Ave	0.2828	0.2353		41600	50000	-16.8	50.0
13C2 PFUnA	Ave	1.358	1.196		44000	50000	-12.0	50.0
13C8 FOSA	Ave	0.6063	0.6170		50900	50000	1.8	50.0
13C2 PFDoA	Ave	1.718	1.352		39300	50000	-21.3	50.0
13C2 PFTeDA	Ave	1.577	1.175		37300	50000	-25.5	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d
 Lims ID: CCV L3
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-Jan-2019 11:13:38 ALS Bottle#: 0 Worklist Smp#: 69
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-069 CCV 3
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 08-Jan-2019 16:19:32 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0327
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 11:54:53
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.392	2.402	-0.010	1.000	394901	45.8		91.6	168	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.392	2.402	-0.010	1.000	34134	4.91		98.2	151	M
D 3 13C5 PFPeA										
267.7 > 222.6	2.801	2.818	-0.017	1.000	284254	52.0		104	999	
4 Perfluoropentanoic acid										
262.9 > 218.8	2.801	2.818	-0.017	1.000	71020	4.39		87.7	73.5	
D 6 13C3 PFBS										
302.0 > 79.8	2.867	2.900	-0.033	1.000	218691	48.5		104	697	
5 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.883	2.900	-0.017	1.006	28863	3.52		70.3	167	
D 7 13C2 PFHxA										
314.8 > 269.6	3.214	3.250	-0.036	1.000	450662	45.8		91.5	1576	
8 Perfluorohexanoic acid										
312.8 > 268.6	3.226	3.250	-0.024	1.004	42386	4.53		90.6	274	
D 9 13C4 PFHpA										
366.9 > 321.8	3.737	3.782	-0.045	1.000	773285	42.9		85.7	759	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.726	3.782	-0.056	0.997	82820	5.48		110	203	
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.759	3.815	-0.056	0.997	29146	3.39		67.8	268	M
D 11 18O2 PFHxS										M
402.9 > 83.8	3.770	3.826	-0.056	1.000	249893	47.9		101	240	M
D 13 M2-6:2 FTS										
428.6 > 408.6	4.330	4.411	-0.081	1.000	73973	46.0		96.8	251	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 1H,1H,2H,2H-perfluorooctanesulfoni										M
426.6 > 406.6	4.330	4.411	-0.081	1.000	8921	5.82		116	238	M
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.449	-0.075	1.000	57635	4.94		98.9	269	
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.468	-0.094	1.000	588794	42.8		85.5	282	
* 15 13C2 PFOA										M
414.9 > 369.8	4.374	4.468	-0.094		733818	50.0			515	M
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.412	4.505	-0.093	0.856	18057	4.00		79.9	296	M
D 20 13C5 PFNA										
467.8 > 422.8	5.127	5.222	-0.095	1.000	801599	43.2		86.3	326	
19 Perfluorononanoic acid										
462.8 > 418.8	5.140	5.222	-0.082	1.003	71446	4.05		81.1	299	
D 22 13C4 PFOS										
502.8 > 79.8	5.154	5.236	-0.082	1.000	226208	49.0		102	255	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.250	-0.096	1.000	24064	4.92		98.4	470	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.883	5.998	-0.115	1.000	203813	46.7		97.6	1308	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.883	5.998	-0.115	1.000	14318	4.17		83.4	55.2	
D 26 13C2 PFDA										
514.9 > 469.5	5.902	6.022	-0.120	1.000	927173	48.4		96.8	2245	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.902	6.022	-0.120	1.000	75234	4.02		80.4	573	
28 N-methylperfluorooctanesulfonamido										M
569.8 > 418.8	6.277	6.367	-0.090	1.003	14848	3.56		71.1	36.1	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.367	-0.108	1.000	192225	39.3		78.6	1130	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.616	6.734	-0.118	1.000	172644	41.6		83.2	667	
30 N-ethylperfluorooctanesulfonamidoa										M
583.9 > 418.8	6.634	6.762	-0.128	1.003	14152	4.26		85.1	40.2	M
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.634	6.762	-0.128	1.287	22840	4.61		92.3	319	
D 32 13C2 PFUnA										
564.8 > 519.8	6.652	6.777	-0.125	1.000	877408	44.0		88.0	1481	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.777	-0.107	1.003	89051	4.95		98.9	368	
D 35 13C8 FOSA										
505.8 > 77.8	6.917	6.945	-0.028	1.000	452774	50.9		102	3747	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.917	6.959	-0.042	1.000	41108	5.36		107	573	
D 37 13C2 PFDoA										
614.8 > 569.6	7.339	7.474	-0.135	1.000	992162	39.3		78.7	3682	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
36 Perfluorododecanoic acid	612.8 > 568.6	7.339	7.474	-0.135	1.000	87140	5.12	102	984		
38 Perfluorotridecanoic acid	662.8 > 618.6	7.970	8.097	-0.127	0.934	88302	5.24	105	496		
39 Perfluorotetradecanoic acid	712.8 > 668.6	8.529	8.666	-0.137	1.000	73605	4.38	Target=1.00	87.5	395	M
	712.8 > 168.8	8.514	8.666	-0.152	0.998	14394		5.11(0.90-1.10)		94.3	
	712.8 > 218.8	8.545	8.666	-0.121	1.002	5776		12.74(0.90-1.10)		34.4	M
D 40 13C2 PFTeDA	714.8 > 669.6	8.529	8.681	-0.152	1.000	862559	37.3		74.5	588	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L3_00001

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d

Injection Date: 08-Jan-2019 11:13:38

Instrument ID: LC410

Lims ID: CCV L3

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 69

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

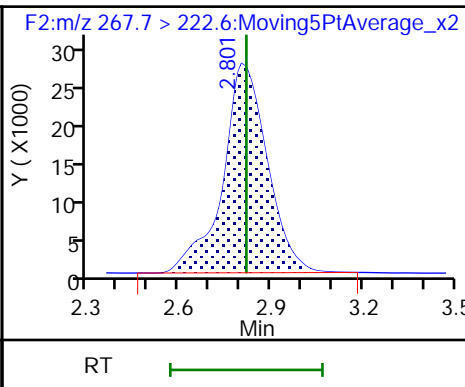
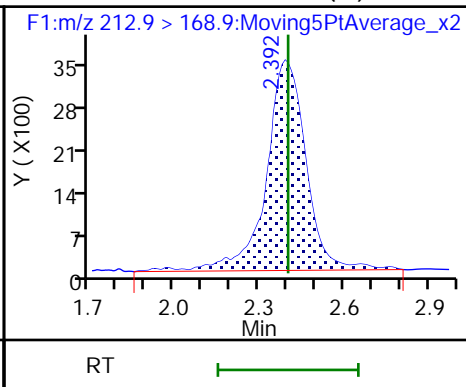
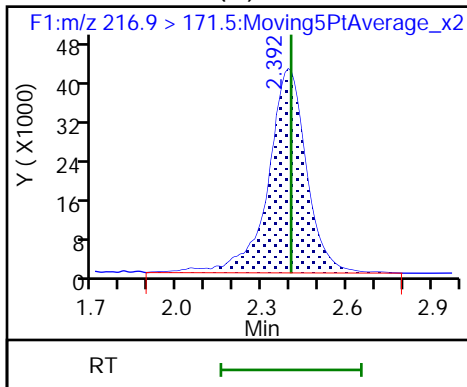
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

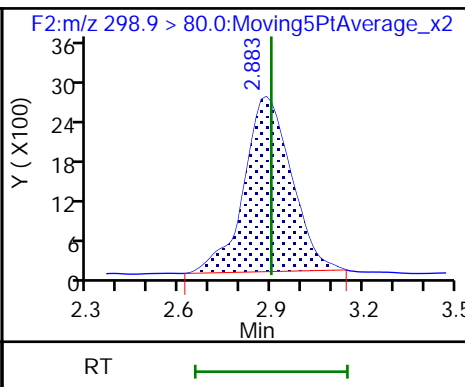
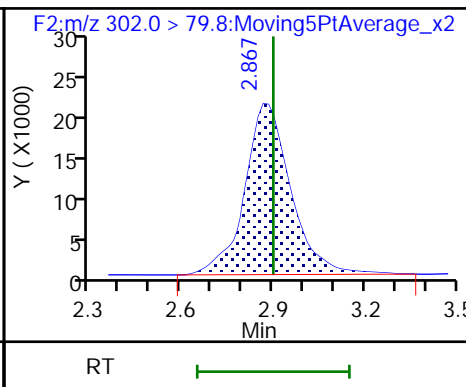
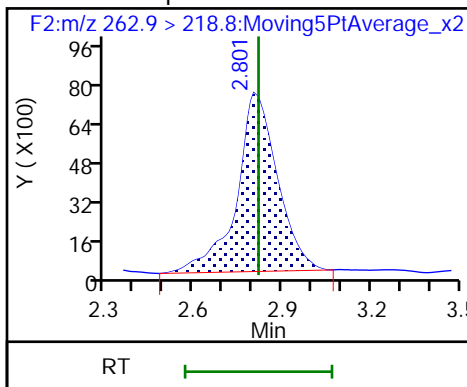
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 6 13C3 PFBS

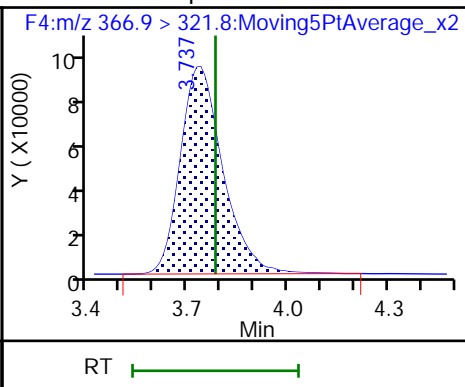
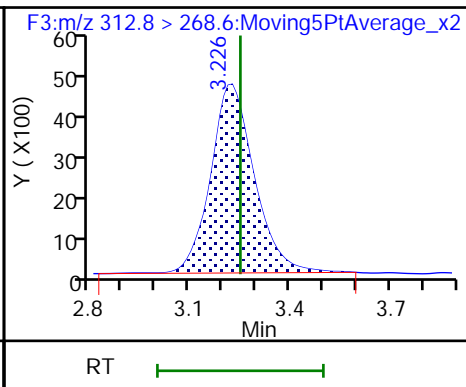
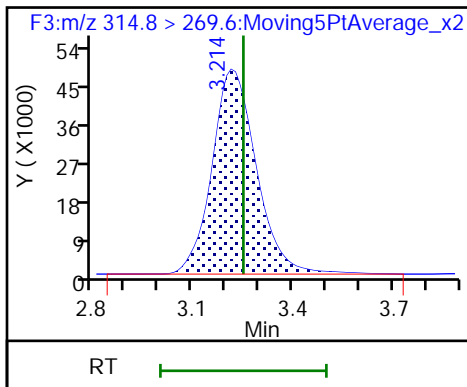
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

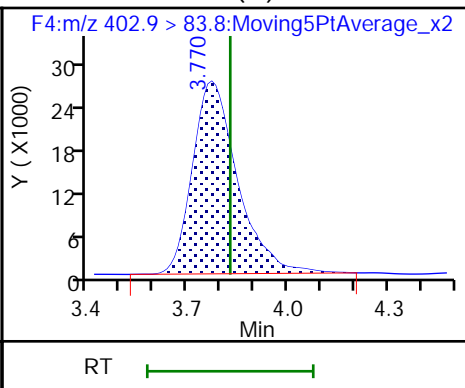
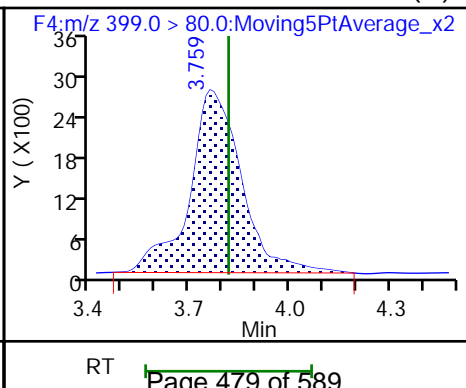
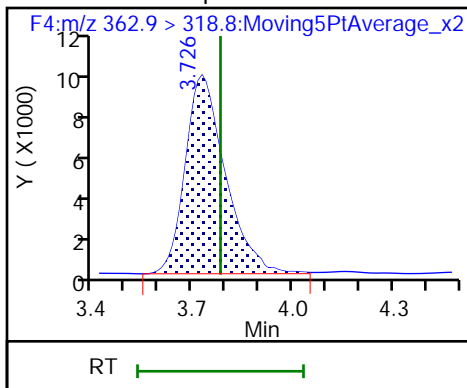
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

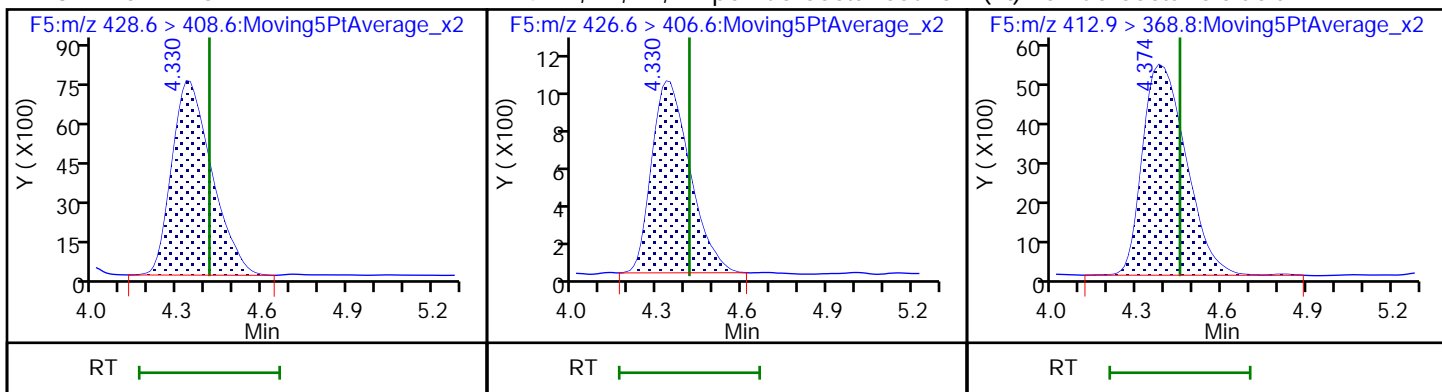
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS (M)



D 13 M2-6:2 FTS

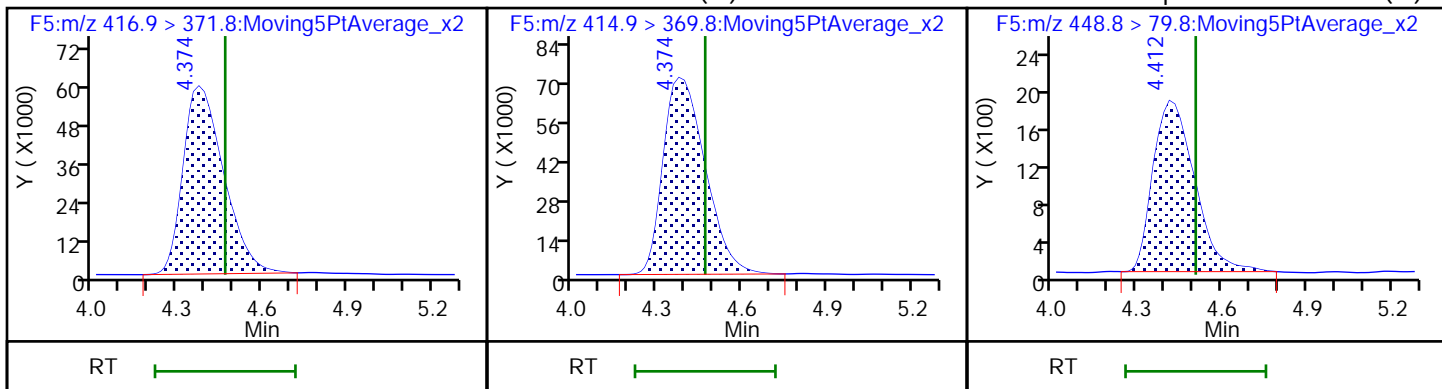
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) Perfluorooctanoic acid



D 17 13C4 PFOA

* 15 13C2 PFOA (M)

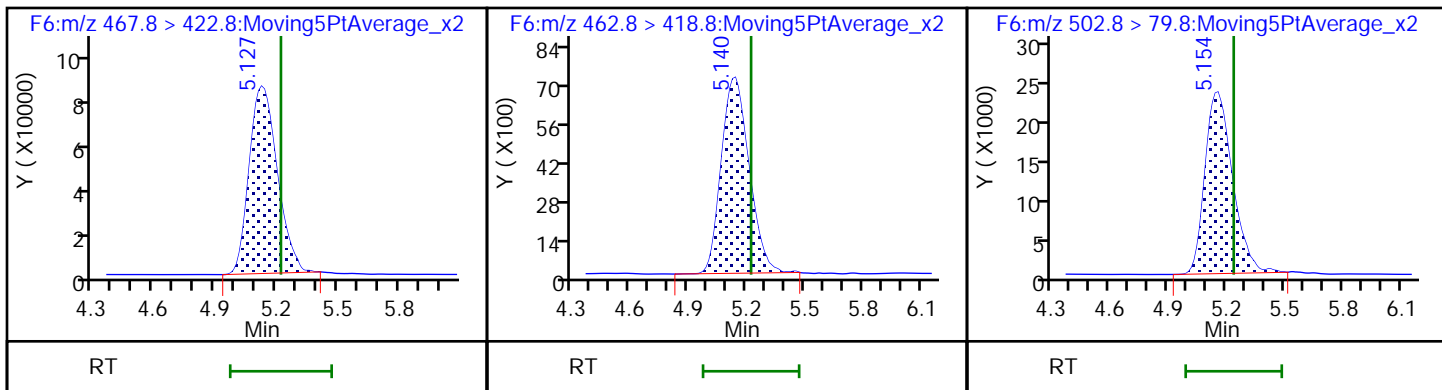
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid

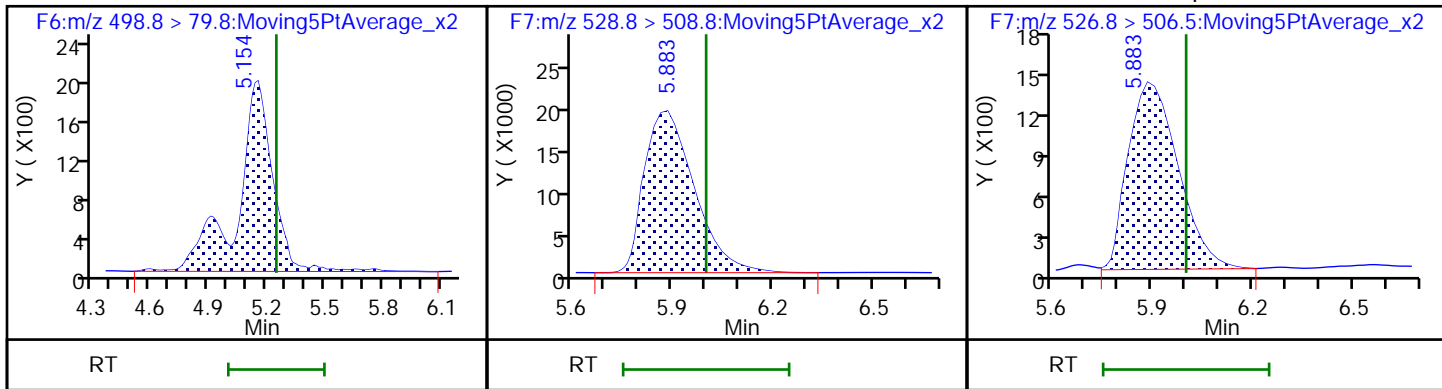
D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid

D 24 M2-8:2 FTS

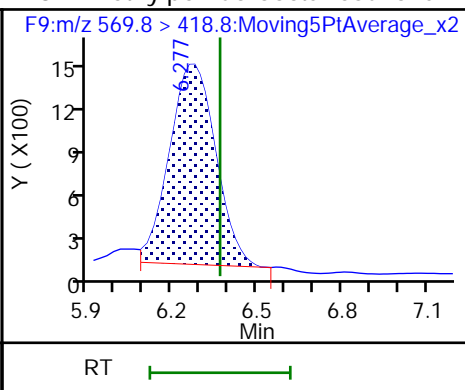
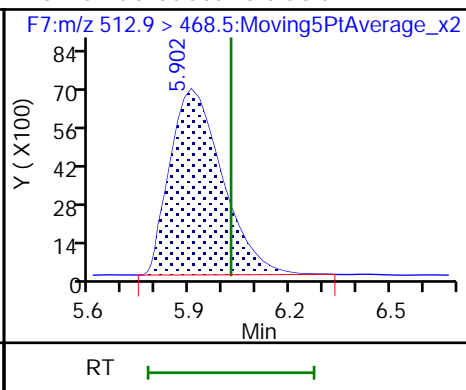
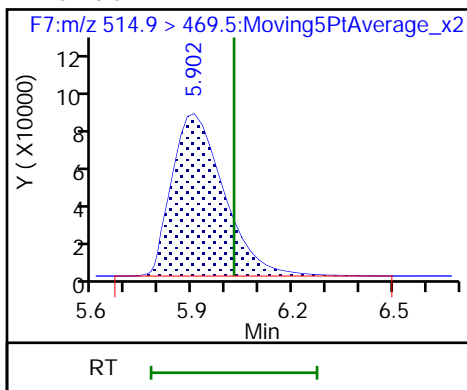
23 1H,1H,2H,2H-perfluorodecanesulfoni



D 26 13C2 PFDA

25 Perfluorodecanoic acid

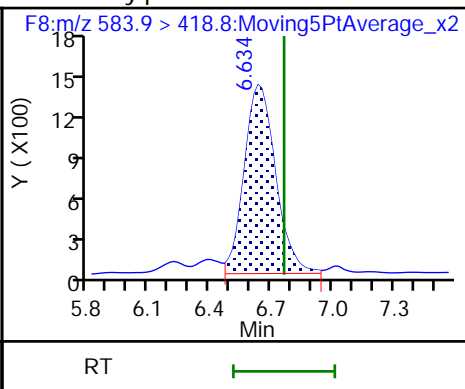
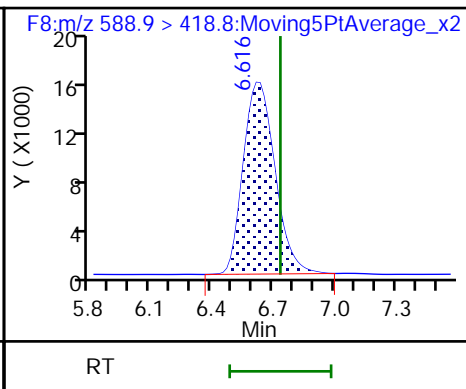
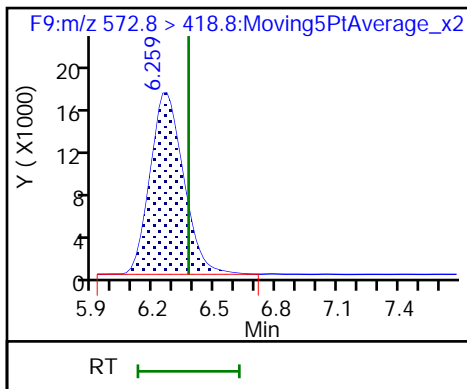
28 N-methylperfluorooctanesulfonamido (M)



D 27 d3-NMeFOSAA

D 29 d5-NEtFOSAA

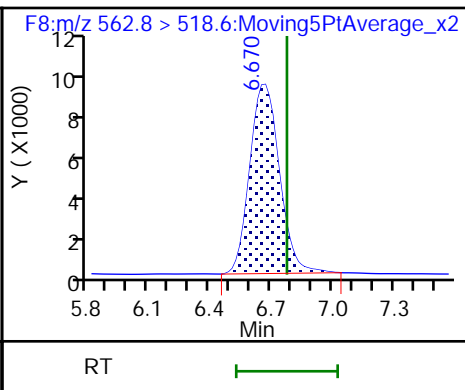
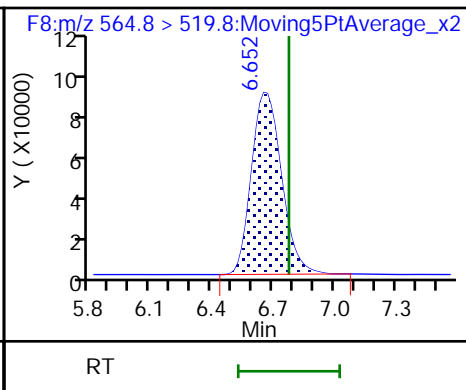
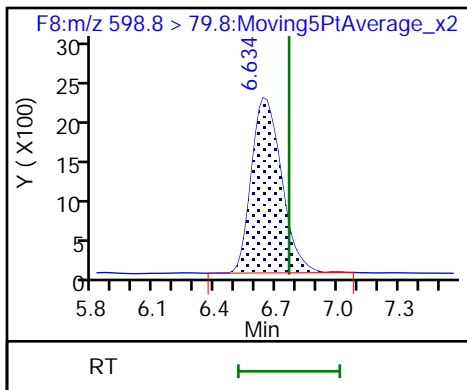
30 N-ethylperfluorooctanesulfonamidoa (M)



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

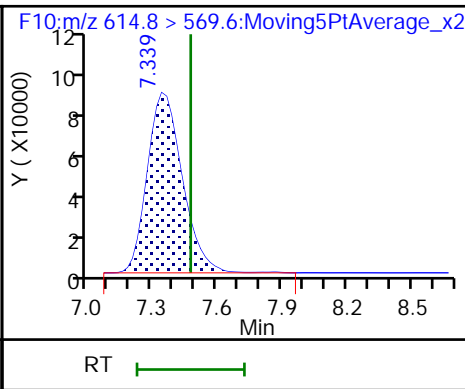
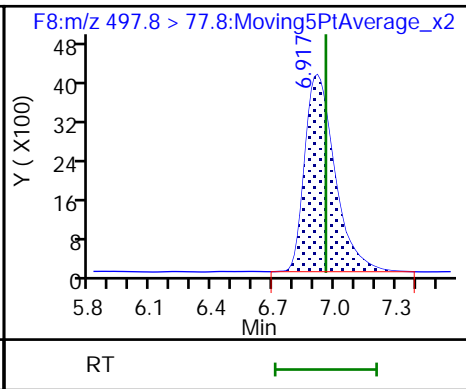
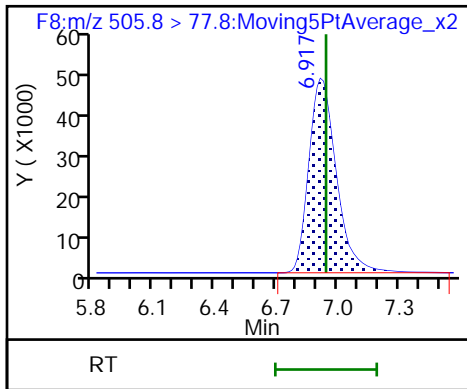
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

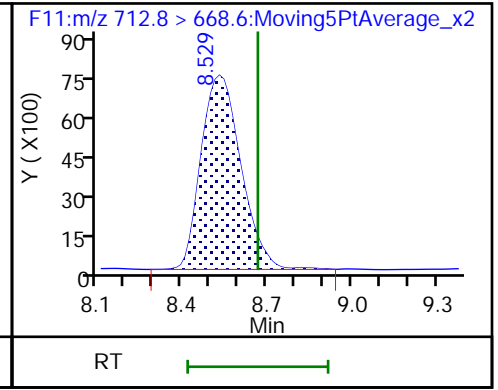
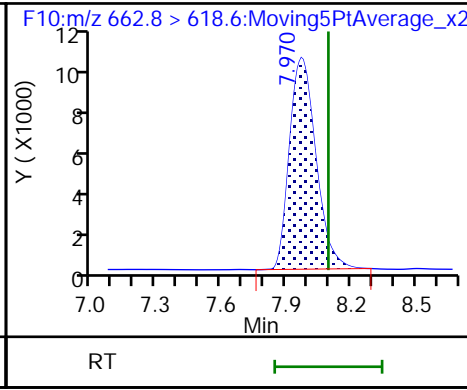
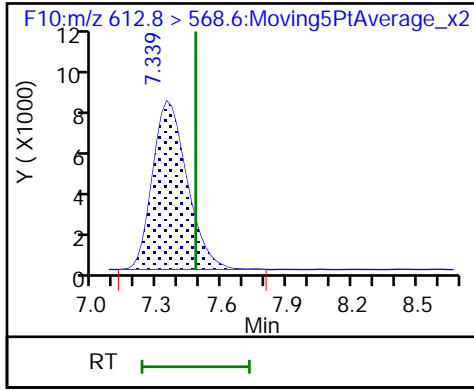
D 37 13C2 PFDoA



36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

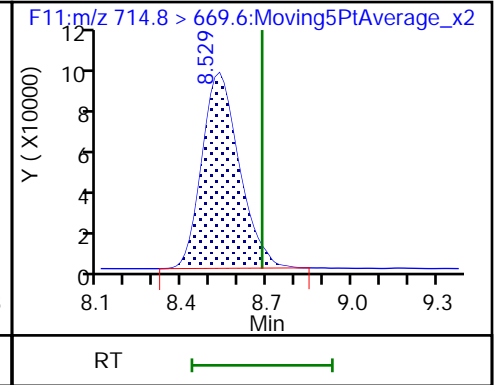
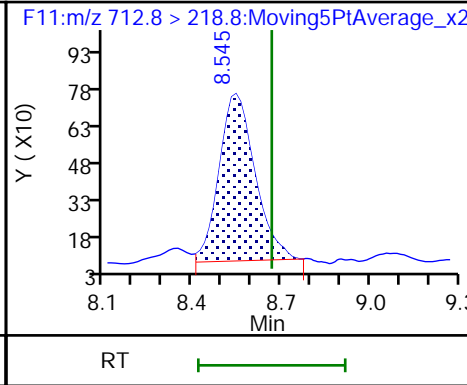
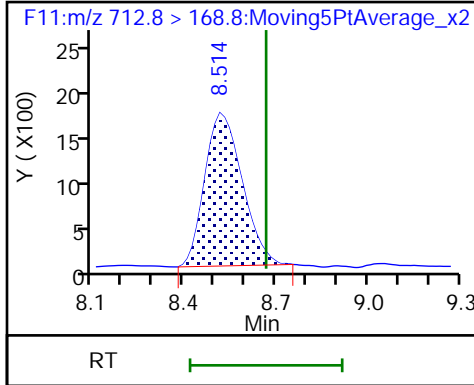
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid (M)

D 40 13C2 PFTeDA



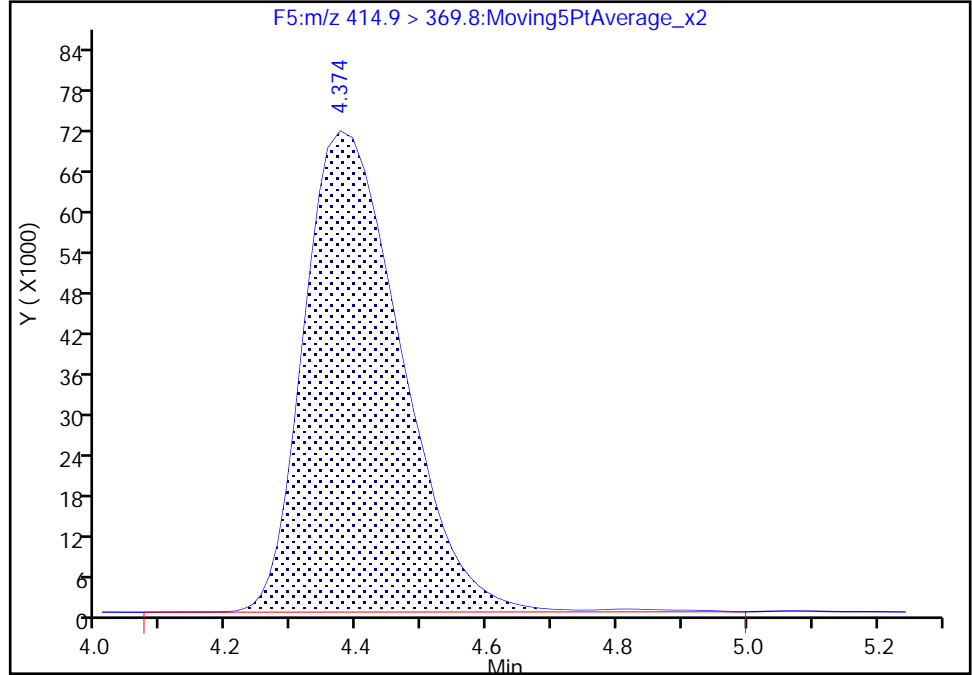
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d
Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

* 15 13C2 PFOA, CAS: STL00623
Signal: 1

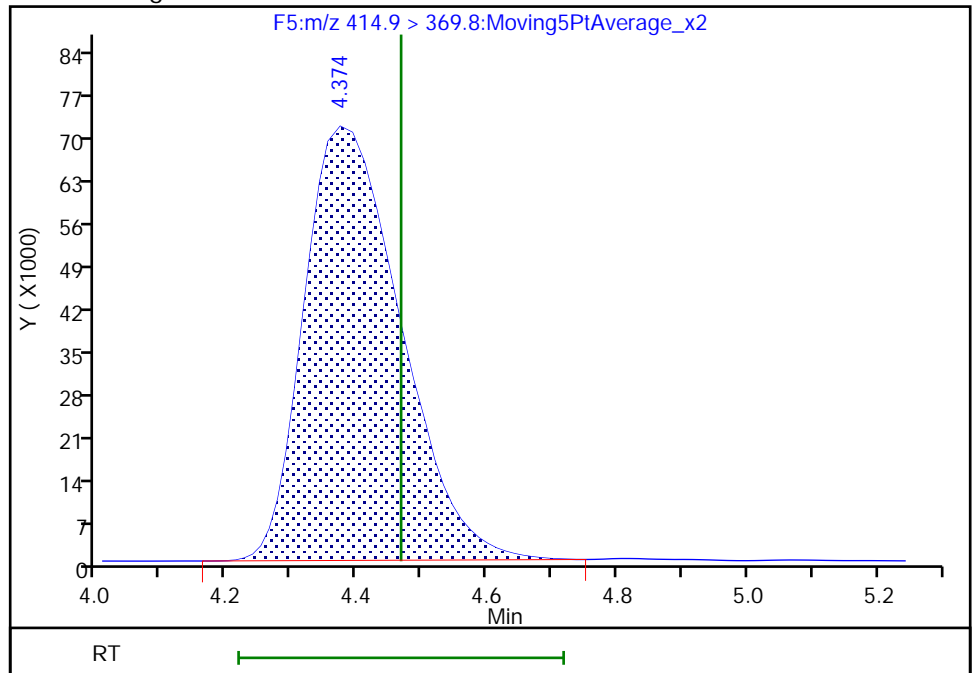
RT: 4.37
Area: 741013
Amount: 50.000000
Amount Units: ng/ml

Processing Integration Results



RT: 4.37
Area: 733818
Amount: 50.000000
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:12:22
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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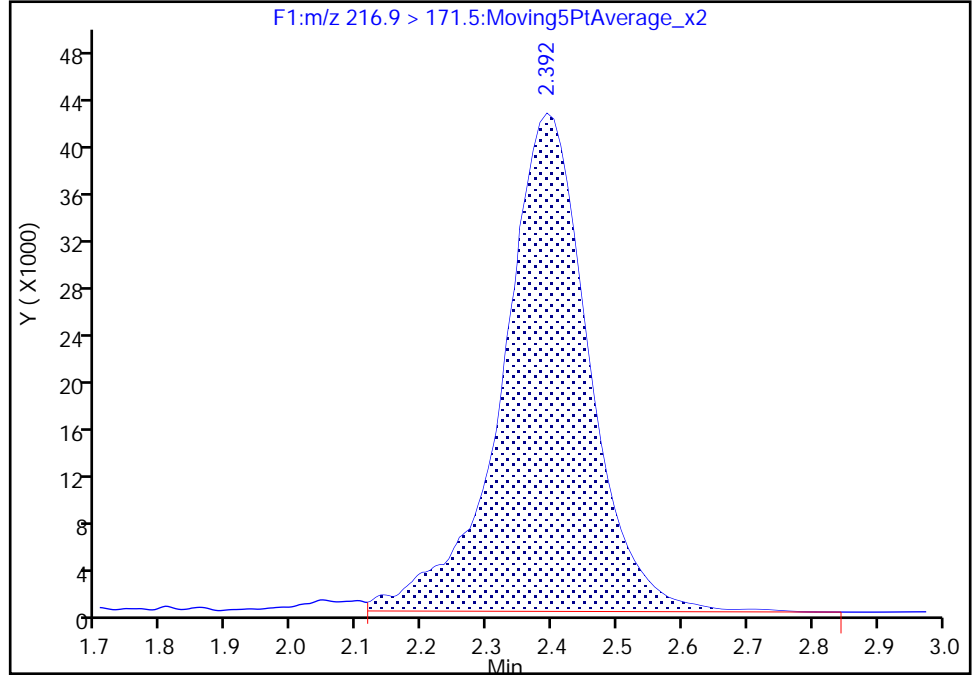
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d
Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

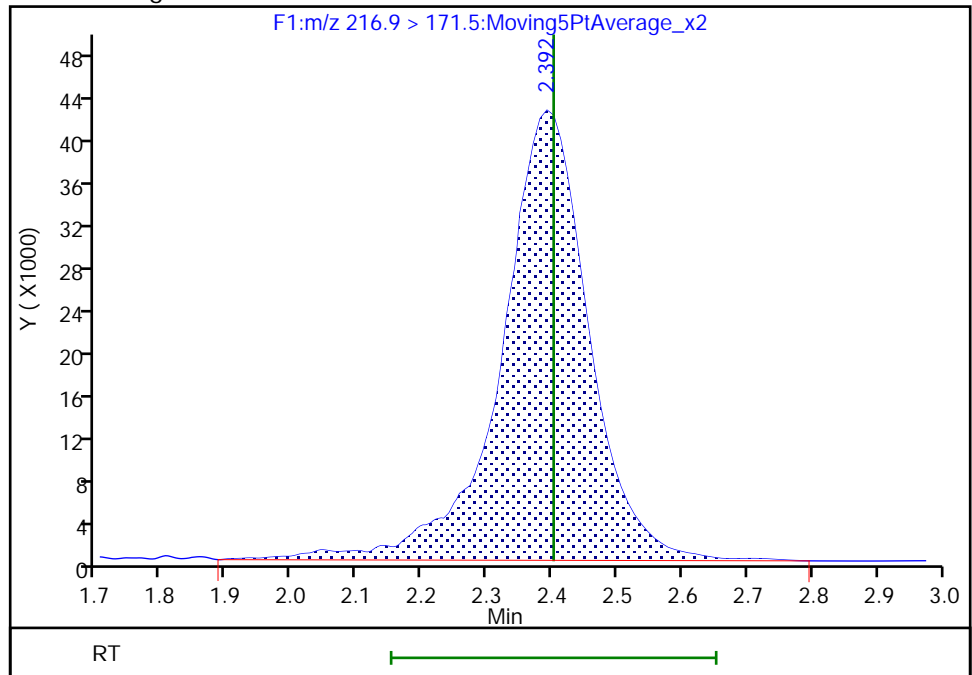
RT: 2.39
Area: 388752
Amount: 44.647710
Amount Units: ng/ml

Processing Integration Results



RT: 2.39
Area: 394901
Amount: 45.798605
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:11:42
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

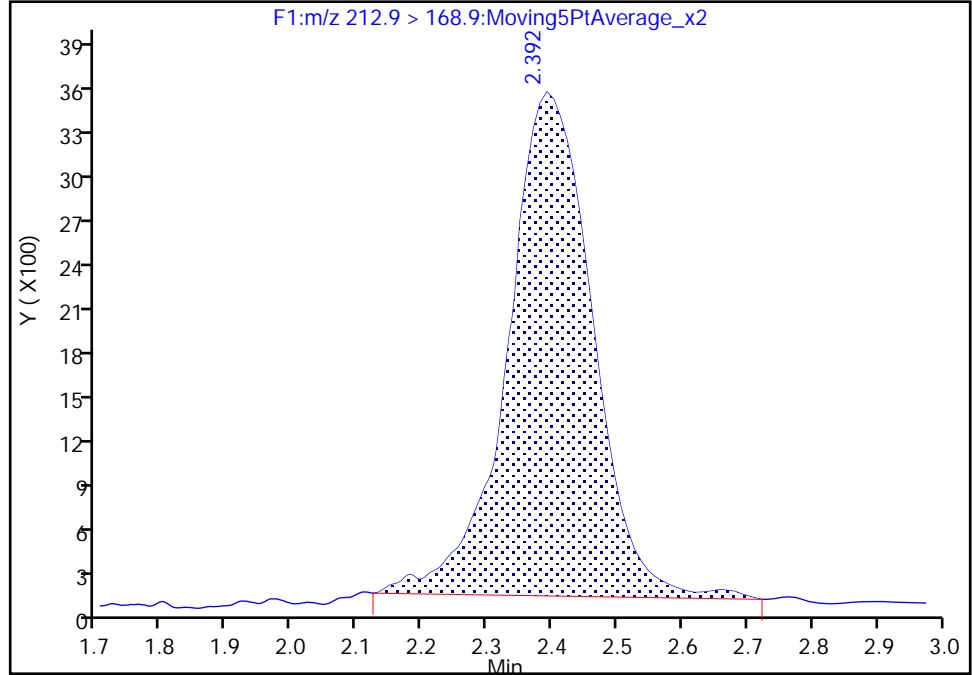
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Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

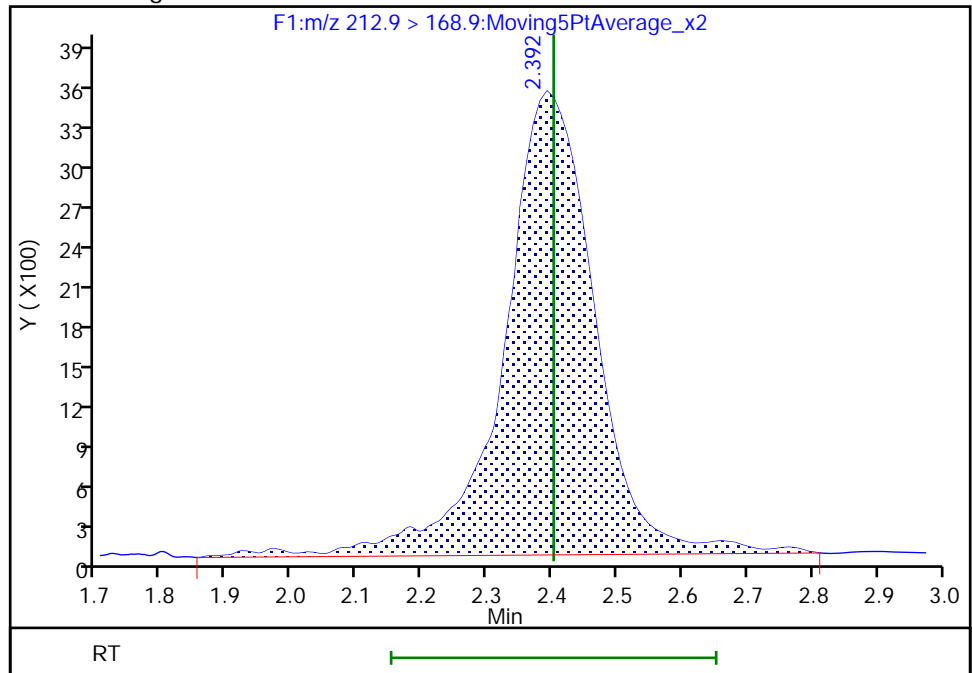
RT: 2.39
Area: 31145
Amount: 4.463832
Amount Units: ng/ml

Processing Integration Results



RT: 2.39
Area: 34134
Amount: 4.910504
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

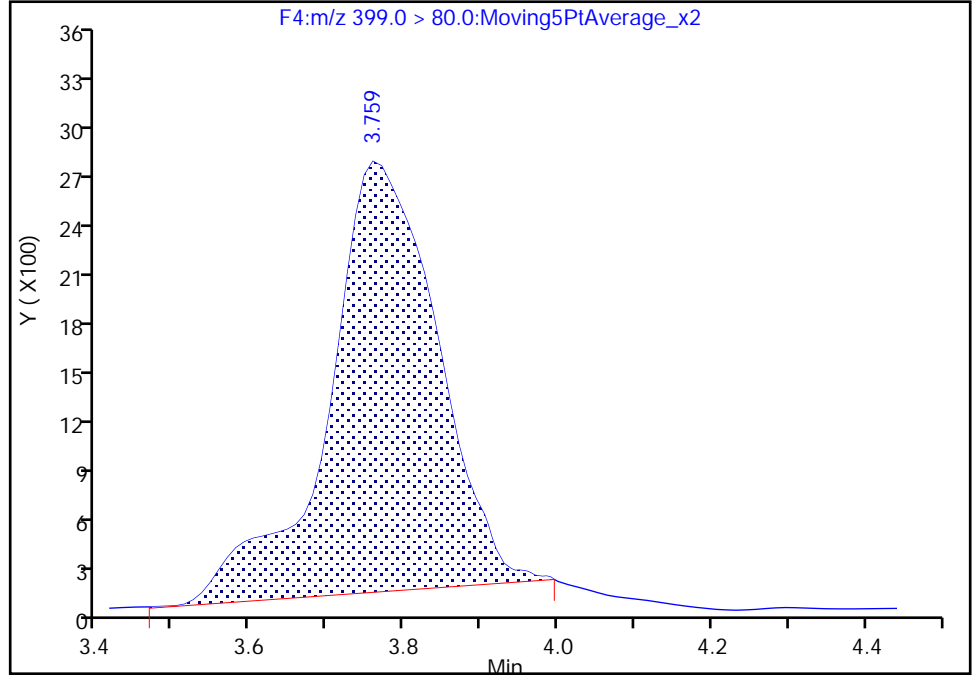
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d
Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

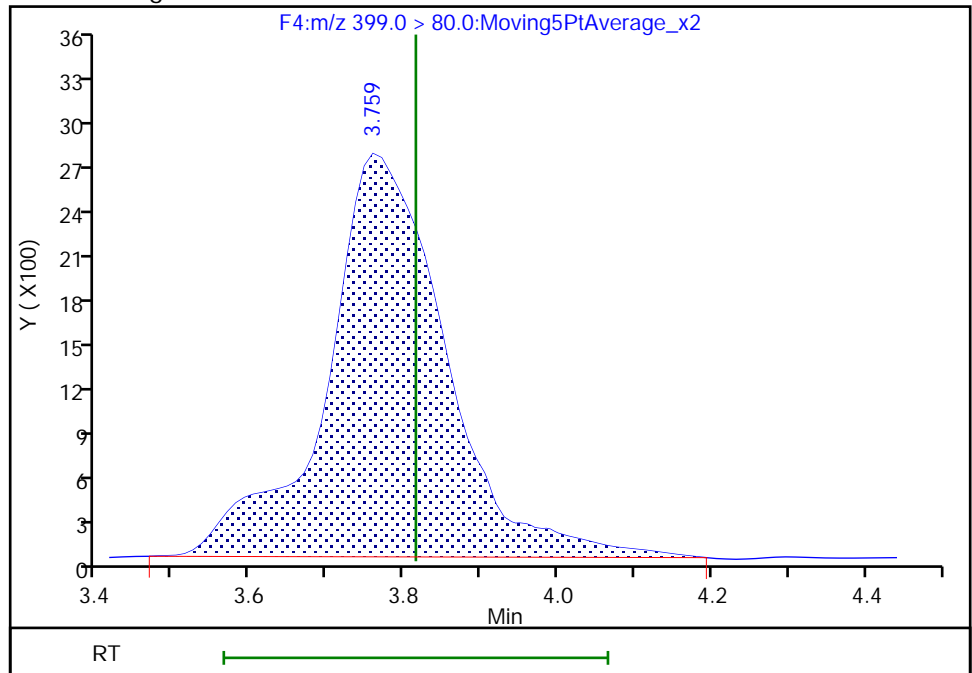
RT: 3.76
Area: 25768
Amount: 5.223393
Amount Units: ng/ml

Processing Integration Results



RT: 3.76
Area: 29146
Amount: 3.388394
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:12:01
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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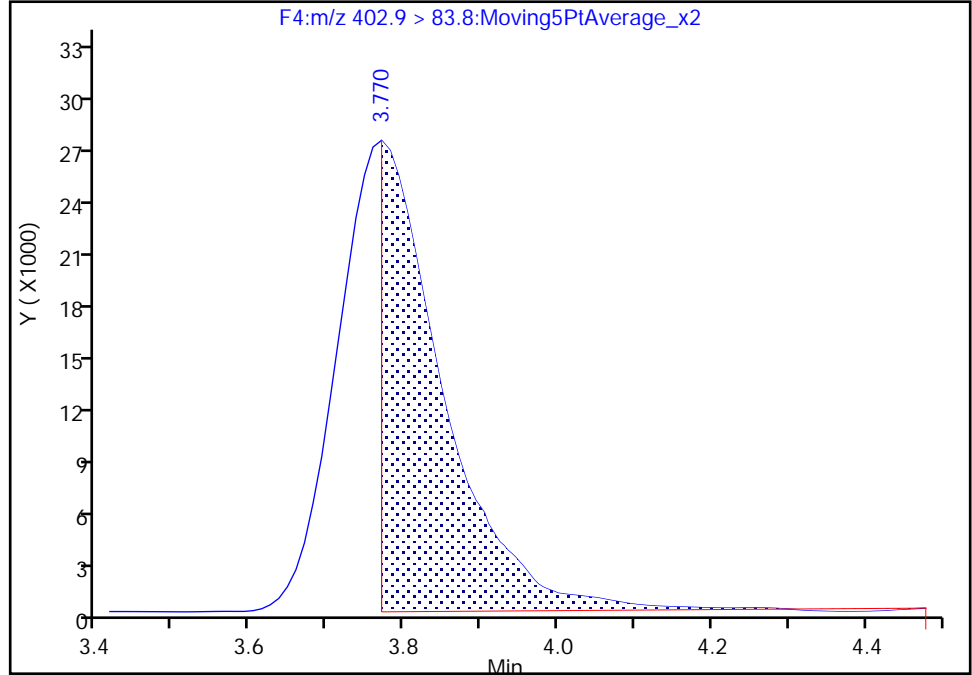
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d
Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

D 11 18O2 PFHxS, CAS: STL00994
Signal: 1

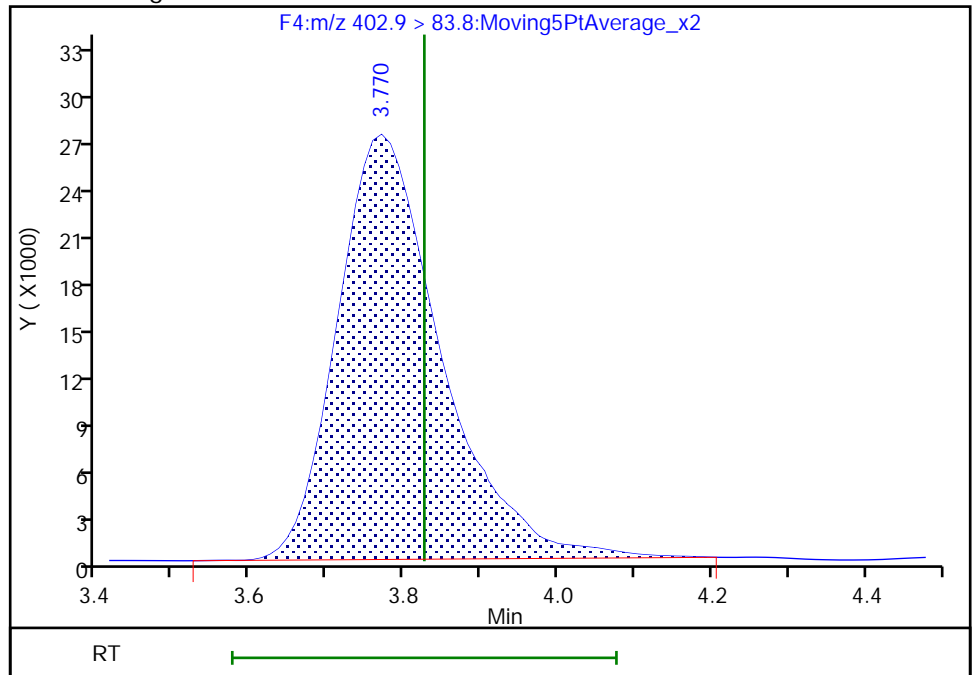
RT: 3.77
Area: 146688
Amount: 27.839616
Amount Units: ng/ml

Processing Integration Results



RT: 3.77
Area: 249893
Amount: 47.891695
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

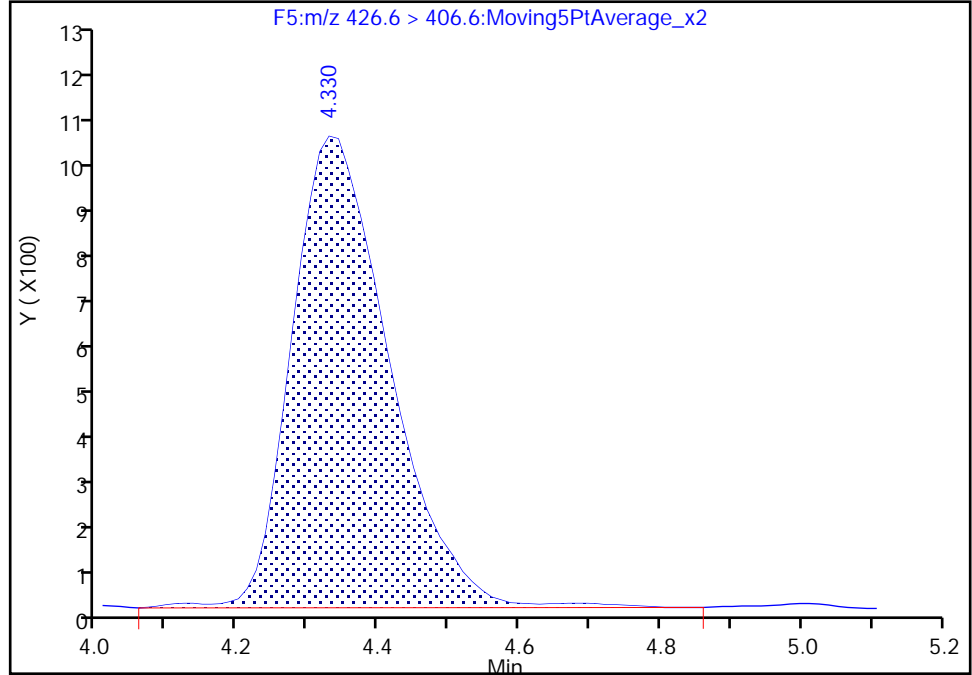
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A69.d
Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

14 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

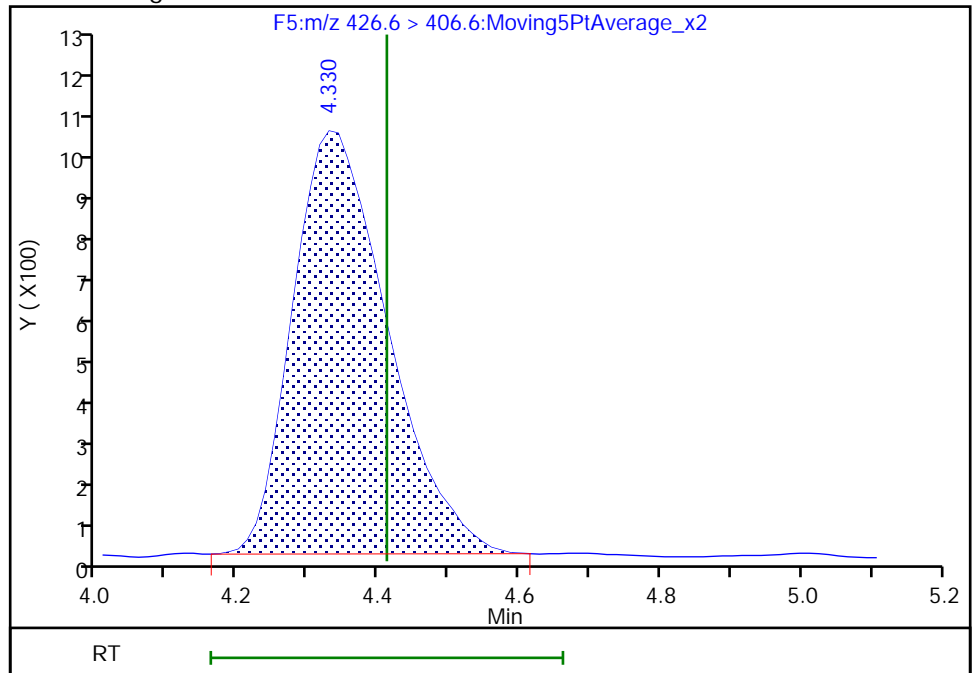
RT: 4.33
Area: 9212
Amount: 6.008163
Amount Units: ng/ml

Processing Integration Results



RT: 4.33
Area: 8921
Amount: 5.818370
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:12:16
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

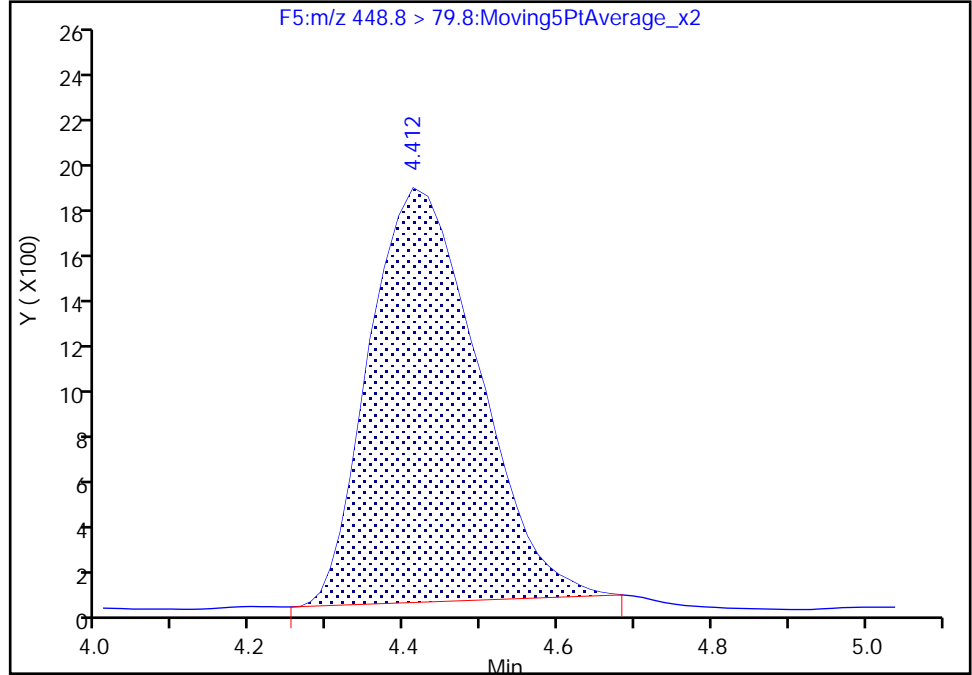
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Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

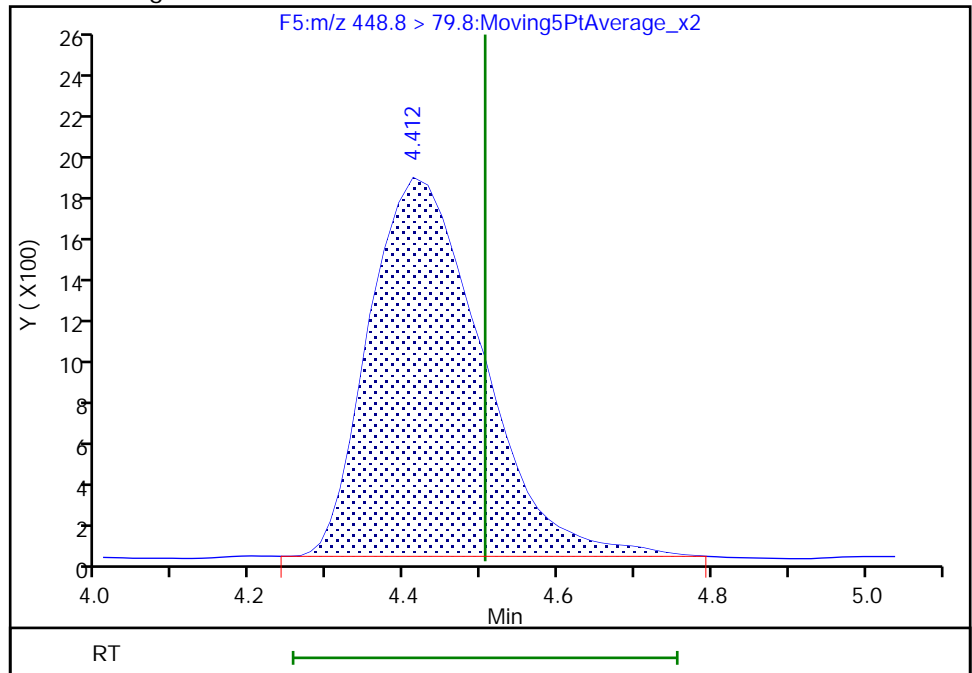
RT: 4.41
Area: 17249
Amount: 3.817797
Amount Units: ng/ml

Processing Integration Results



RT: 4.41
Area: 18057
Amount: 3.996635
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:12:26
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

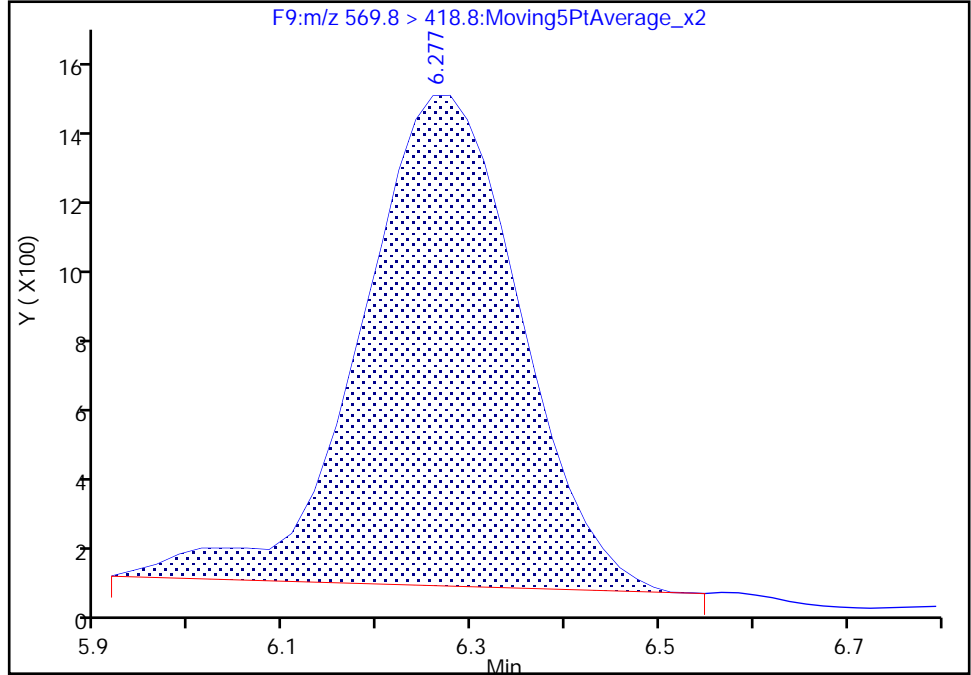
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Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

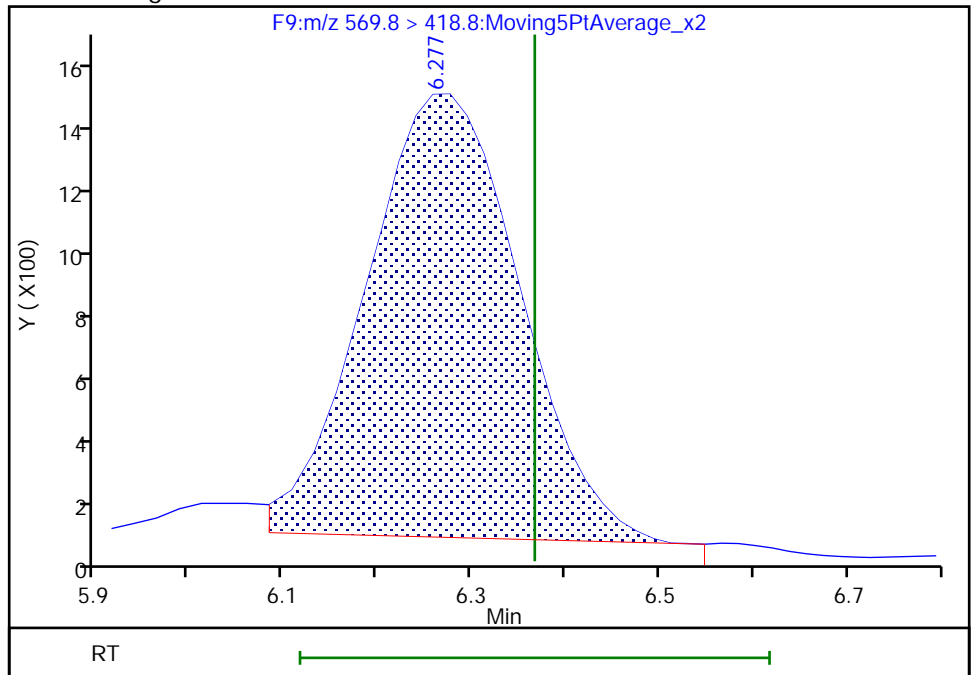
RT: 6.28
Area: 15433
Amount: 3.696750
Amount Units: ng/ml

Processing Integration Results



RT: 6.28
Area: 14848
Amount: 3.556622
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:12:38
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

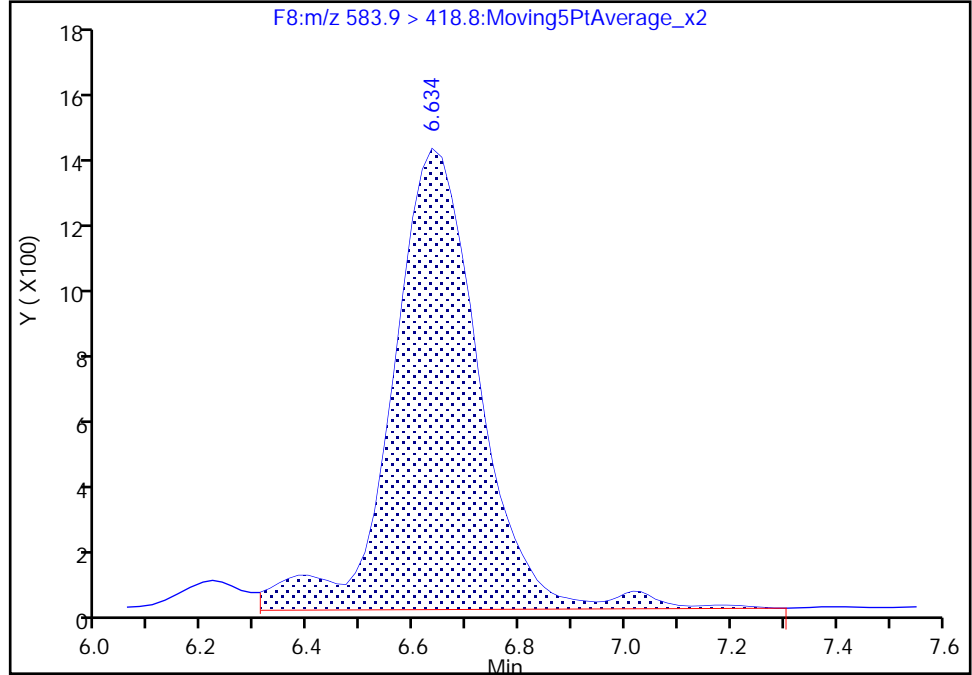
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Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F8:MRM

30 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

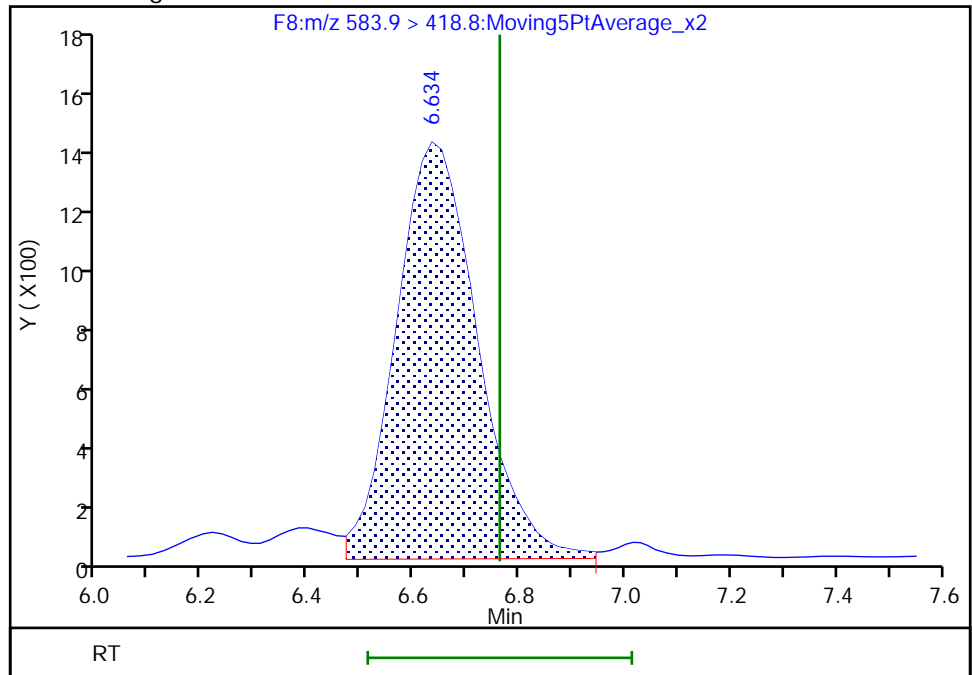
RT: 6.63
Area: 15277
Amount: 4.595823
Amount Units: ng/ml

Processing Integration Results



RT: 6.63
Area: 14152
Amount: 4.257386
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:12:46
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

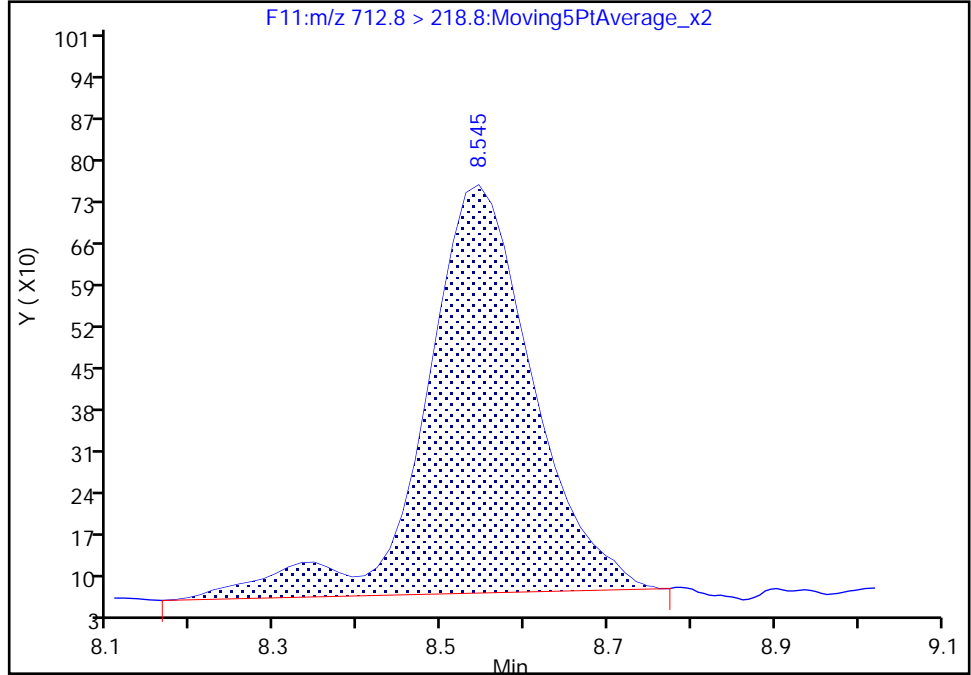
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Injection Date: 08-Jan-2019 11:13:38 Instrument ID: LC410
Lims ID: CCV L3
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 69
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:M/RM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 3

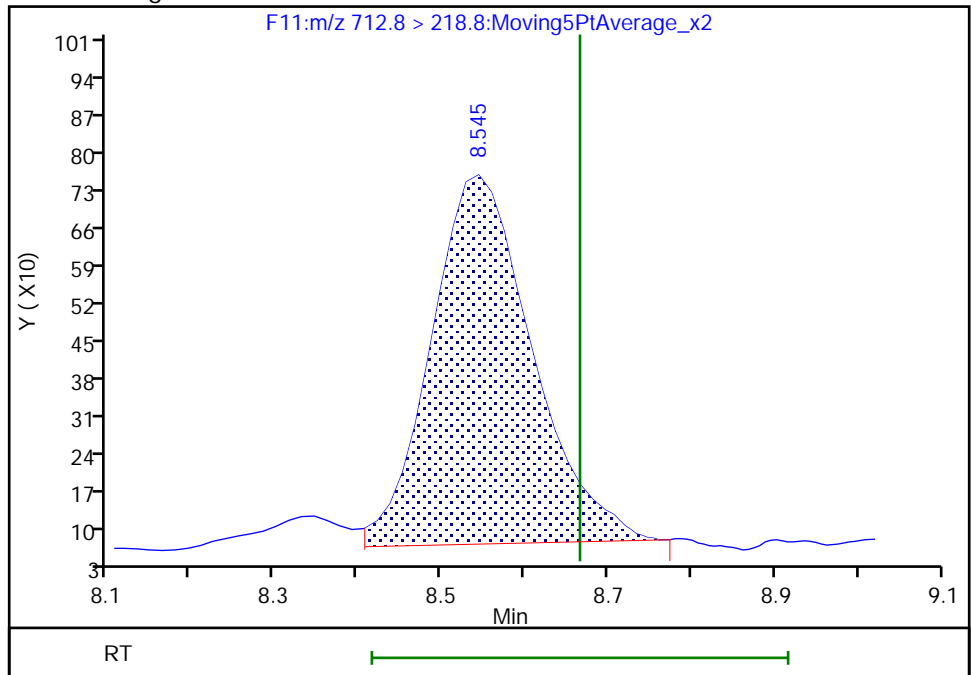
RT: 8.54
Area: 6197
Amount: 4.377047
Amount Units: ng/ml

Processing Integration Results



RT: 8.54
Area: 5776
Amount: 4.377047
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 12:13:03
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCV 200-138864/82 Calibration Date: 01/08/2019 14:40
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A82.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	L1ID		0.8848		20700	20000	3.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	2.848	2.325		16300	20000	-18.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.745	1.322		15200	20000	-24.2	40.0
Perfluorohexanoic acid (PFHxA)	AveID	1.038	0.9736		18800	20000	-6.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	0.9775	1.082		22100	20000	10.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	L1ID		1.130		14600	20000	-26.9	40.0
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	AveID	0.9845	1.063		21600	20000	8.0	40.0
Perfluorooctanoic acid (PFOA)	AveID	0.9899	0.9889		20000	20000	-0.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9547	0.7652		16000	20000	-19.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.099	1.019		18500	20000	-7.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.034	0.8968		17400	20000	-13.2	40.0
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	AveID	0.8068	0.6803		16900	20000	-15.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.009	0.8344		16500	20000	-17.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.086	0.7964		14700	20000	-26.7	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9627	0.7600		15800	20000	-21.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	1.046	0.9220		17600	20000	-11.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.026	1.085		21100	20000	5.7	40.0
Perfluorooctanesulfonamide (PFOSA)	AveID	0.8462	0.8788		20800	20000	3.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.8584	0.8442		19700	20000	-1.7	40.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.9775	1.122		23000	20000	14.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.9748	0.9185		18800	20000	-5.8	40.0
13C4 PFBA	Ave	0.5875	0.4972		42300	50000	-15.4	50.0
13C5 PFPeA	Ave	0.3725	0.3930		52800	50000	5.5	50.0
13C3 PFBS	Ave	0.3075	0.3394		51300	46500	10.4	50.0
13C2 PFHxA	Ave	0.6710	0.5814		43300	50000	-13.4	50.0
13C4 PFHpA	Ave	1.229	1.018		41400	50000	-17.1	50.0
18O2 PFHxS	Ave	0.3555	0.3764		50100	47300	5.9	50.0
M2-6:2 FTS	Ave	0.1097	0.1118		48400	47500	1.9	50.0
13C4 PFOA	Ave	0.9383	0.8204		43700	50000	-12.6	50.0
13C5 PFNA	Ave	1.265	1.047		41400	50000	-17.3	50.0
13C4 PFOS	Ave	0.3148	0.3539		53700	47800	12.4	50.0
M2-8:2 FTS	Ave	0.2971	0.2937		47300	47900	-1.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Lab Sample ID: CCV 200-138864/82 Calibration Date: 01/08/2019 14:40
 Instrument ID: LC410 Calib Start Date: 10/17/2018 13:20
 GC Column: C-18 ID: 4.60 (mm) Calib End Date: 10/17/2018 15:27
 Lab File ID: PF010719A82.d Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFDA	Ave	1.305	1.313		50300	50000	0.7	50.0
d3-NMeFOSAA	Ave	0.3333	0.2514		37700	50000	-24.6	50.0
d5-NEtFOSAA	Ave	0.2828	0.2476		43800	50000	-12.5	50.0
13C2 PFUnA	Ave	1.358	1.230		45300	50000	-9.5	50.0
13C8 FOSA	Ave	0.6063	0.6401		52800	50000	5.6	50.0
13C2 PFDoA	Ave	1.718	1.453		42300	50000	-15.4	50.0
13C2 PFTeDA	Ave	1.577	1.189		37700	50000	-24.6	50.0

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A82.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-Jan-2019 14:40:37 ALS Bottle#: 0 Worklist Smp#: 82
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-082 CCV 4
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Sublist: chrom-PFCISO_12MRM*sub9
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:37:02 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d

Column 1 : Det: F1:MRM
 Process Host: CTX0303

First Level Reviewer: chirgwinb Date: 08-Jan-2019 16:11:47

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.392	2.402	-0.010	1.000	316599	42.3	84.6	167	
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.382	2.402	-0.020	0.996	112056	20.7	103	319		M
D 3 13C5 PFPeA	267.7 > 222.6	2.801	2.818	-0.017	1.000	250267	52.8	106	1476	
4 Perfluoropentanoic acid	262.9 > 218.8	2.801	2.818	-0.017	1.000	232783	16.3	81.7	465	
D 6 13C3 PFBS	302.0 > 79.8	2.867	2.900	-0.033	1.000	200991	51.3	110	400	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.867	2.900	-0.033	1.000	114315	15.2	75.8	267	
D 7 13C2 PFHxA	314.8 > 269.6	3.214	3.250	-0.036	1.000	370178	43.3	86.6	976	
8 Perfluorohexanoic acid	312.8 > 268.6	3.214	3.250	-0.036	1.000	144159	18.8	93.8	908	
D 9 13C4 PFHpA	366.9 > 321.8	3.715	3.782	-0.067	1.000	648498	41.4	82.9	382	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.715	3.782	-0.067	1.000	280599	22.1	111	1282	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.815	-0.067	0.997	108356	14.6	73.1	439	
D 11 18O2 PFHxS	402.9 > 83.8	3.759	3.826	-0.067	1.000	226734	50.1	106	1630	
D 13 M2-6:2 FTS	428.6 > 408.6	4.317	4.411	-0.094	1.000	67612	48.4	102	398	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.317	4.411	-0.094	1.000	30266	21.6	108	453	
16 Perfluorooctanoic acid	412.9 > 368.8	4.355	4.449	-0.094	1.000	206627	20.0	99.9	753	
D 17 13C4 PFOA	416.9 > 371.8	4.355	4.468	-0.113	1.000	522393	43.7	87.4	509	
* 15 13C2 PFOA	414.9 > 369.8	4.355	4.468	-0.113		636745	50.0		562	
18 Perfluoroheptanesulfonic acid	448.8 > 79.8	4.393	4.505	-0.112	0.855	68978	16.0	80.2	245	M
D 20 13C5 PFNA	467.8 > 422.8	5.113	5.222	-0.109	1.000	666395	41.4	82.7	321	
19 Perfluorononanoic acid	462.8 > 418.8	5.113	5.222	-0.109	1.000	271713	18.5	92.7	736	
D 22 13C4 PFOS	502.8 > 79.8	5.140	5.236	-0.096	1.000	215437	53.7	112	484	M
21 Perfluorooctanesulfonic acid	498.8 > 79.8	5.140	5.250	-0.110	1.000	80842	17.4	86.8	344	M
23 1H,1H,2H,2H-perfluorodecanesulfoni	526.8 > 506.5	5.863	5.998	-0.135	1.000	50891	16.9	84.3	320	M
D 24 M2-8:2 FTS	528.8 > 508.8	5.863	5.998	-0.135	1.000	179165	47.3	98.9	827	
25 Perfluorodecanoic acid	512.9 > 468.5	5.902	6.022	-0.120	1.003	279116	16.5	82.7	1132	
D 26 13C2 PFDA	514.9 > 469.5	5.883	6.022	-0.139	1.000	836288	50.3	101	2455	
28 N-methylperfluorooctanesulfonamido	569.8 > 418.8	6.259	6.367	-0.108	1.003	50985	14.7	73.3	58.4	
D 27 d3-NMeFOSAA	572.8 > 418.8	6.241	6.367	-0.126	1.000	160056	37.7	75.4	727	
D 29 d5-NEtFOSAA	588.9 > 418.8	6.616	6.734	-0.118	1.000	157660	43.8	87.5	1580	
31 Perfluorodecanesulfonic acid	598.8 > 79.8	6.634	6.762	-0.128	1.291	83106	17.6	88.1	640	
30 N-ethylperfluorooctanesulfonamidoa	583.9 > 418.8	6.616	6.762	-0.146	1.000	47927	15.8	78.9	38.9	
D 32 13C2 PFUnA	564.8 > 519.8	6.652	6.777	-0.125	1.000	782900	45.3	90.5	1082	
33 Perfluoroundecanoic acid	562.8 > 518.6	6.652	6.777	-0.125	1.000	339645	21.1	106	759	
D 35 13C8 FOSA	505.8 > 77.8	6.931	6.945	-0.014	1.000	407572	52.8	106	2178	
34 Perfluorooctanesulfonamide	497.8 > 77.8	6.931	6.959	-0.028	1.000	143269	20.8	104	1247	
D 37 13C2 PFDoA	614.8 > 569.6	7.339	7.474	-0.135	1.000	925242	42.3	84.6	3886	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
36 Perfluorododecanoic acid	612.8 > 568.6	7.339	7.474	-0.135	1.000	312447	19.7	98.3	1538	
38 Perfluorotridecanoic acid	662.8 > 618.6	7.953	8.097	-0.144	0.934	339793	23.0	115	1595	
39 Perfluorotetradecanoic acid	712.8 > 668.6	8.514	8.666	-0.152	1.000	278157	18.8	Target=1.00	94.2	1091
	712.8 > 168.8	8.514	8.666	-0.152	1.000	52322		5.32(0.90-1.10)		220
	712.8 > 218.8	8.499	8.666	-0.167	0.998	29467		9.44(0.90-1.10)		179
D 40 13C2 PFTeDA	714.8 > 669.6	8.514	8.681	-0.167	1.000	757065	37.7	75.4	597	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFAS24-L4_00003

Amount Added: 100.00

Units: uL

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A82.d

Injection Date: 08-Jan-2019 14:40:37

Instrument ID: LC410

Lims ID: CCV L4

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 82

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

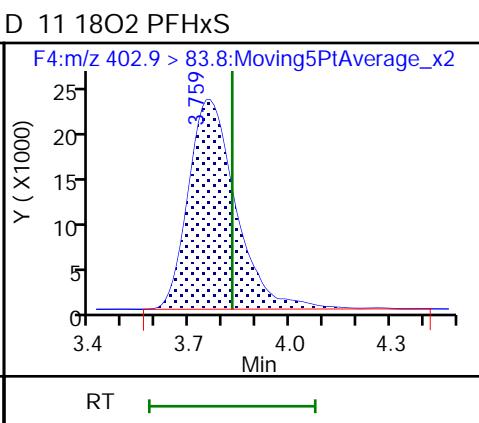
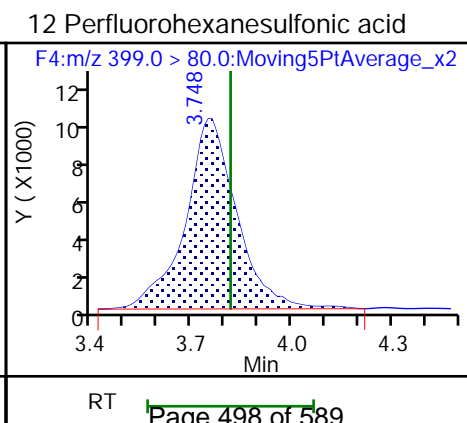
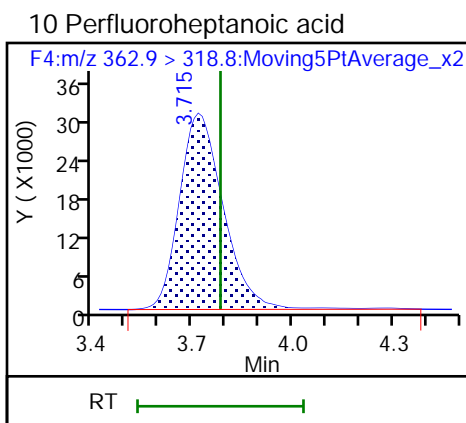
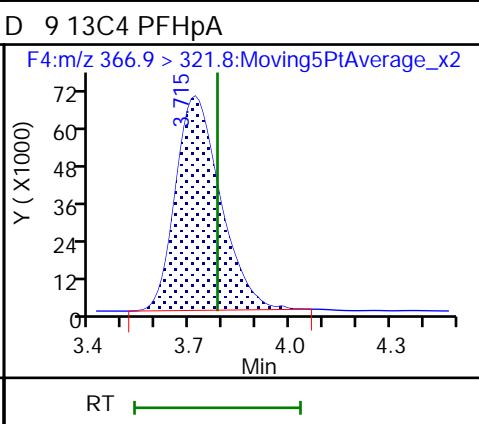
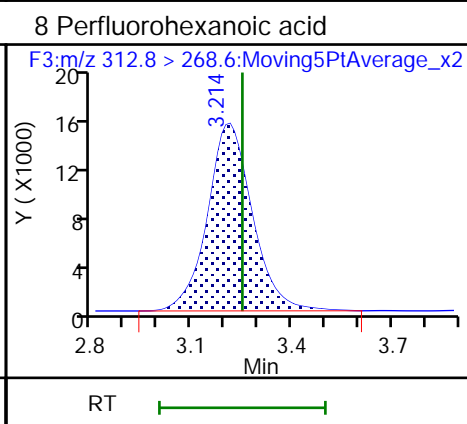
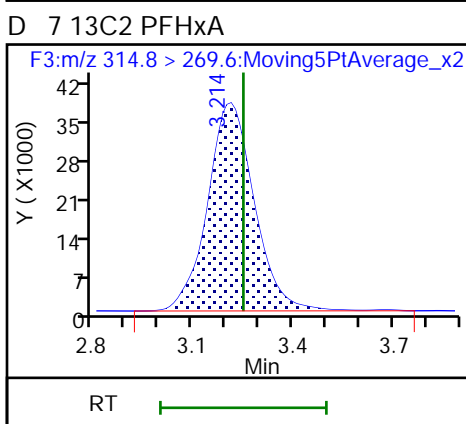
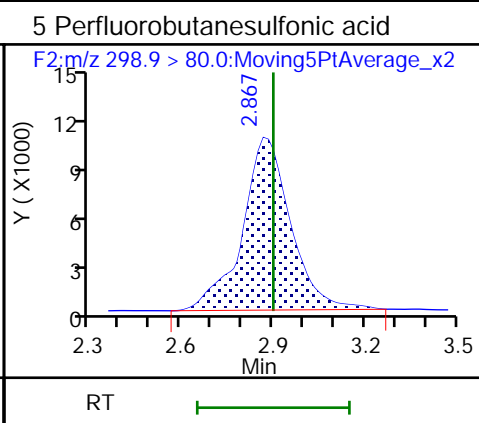
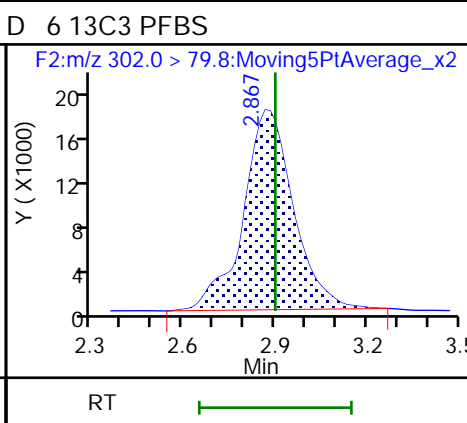
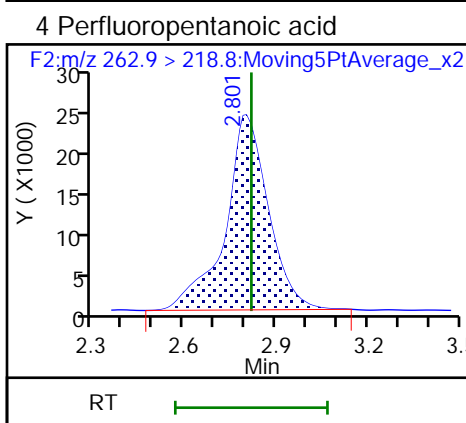
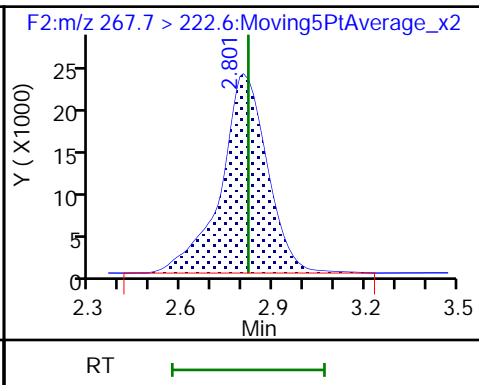
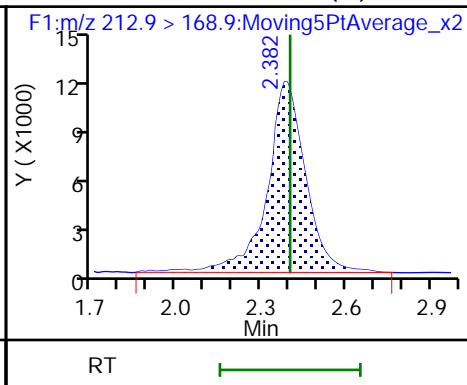
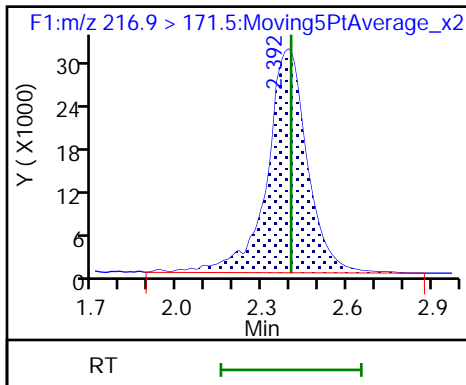
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Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

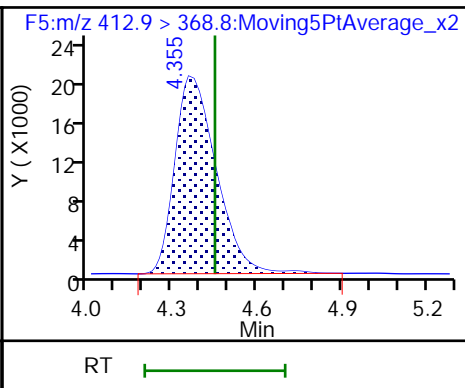
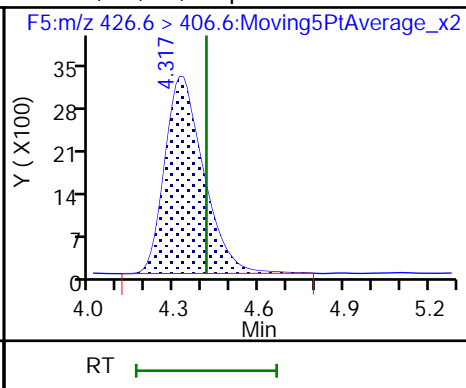
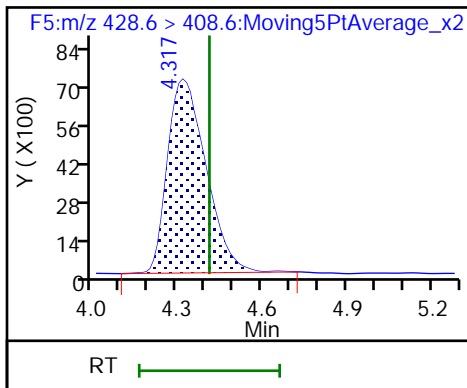
2 Perfluorobutanoic acid (M)

D 3 13C5 PFPeA



D 13 M2-6:2 FTS

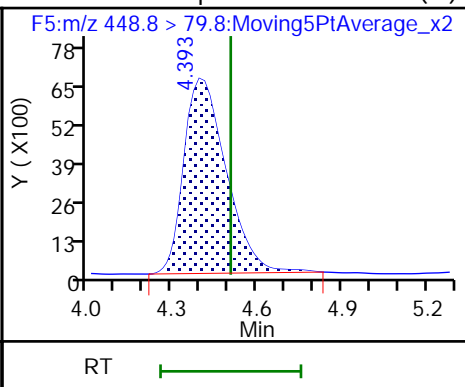
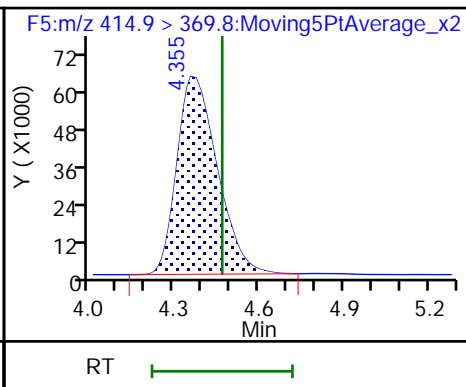
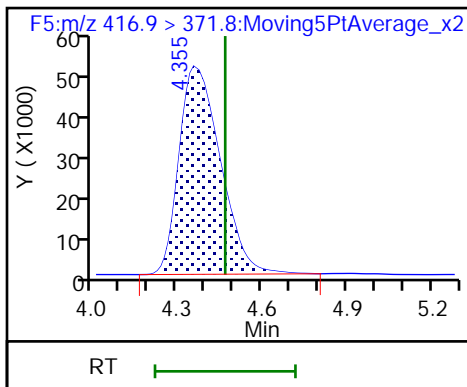
14 1H,1H,2H,2H-perfluorooctanesulfonyl 16 Perfluorooctanoic acid



D 17 13C4 PFOA

* 15 13C2 PFOA

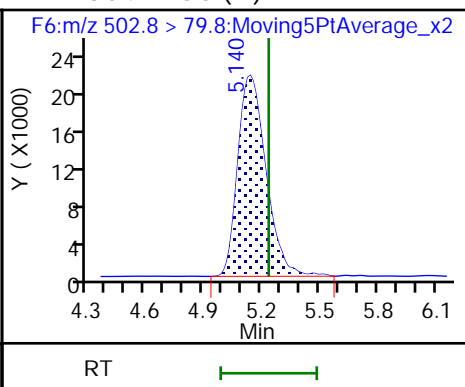
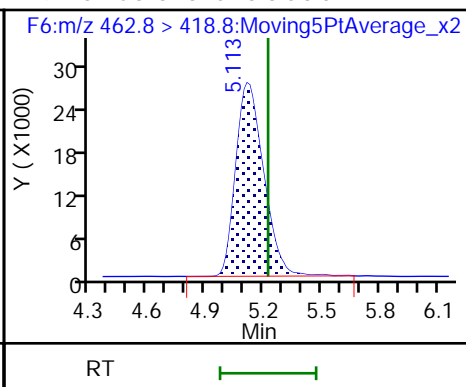
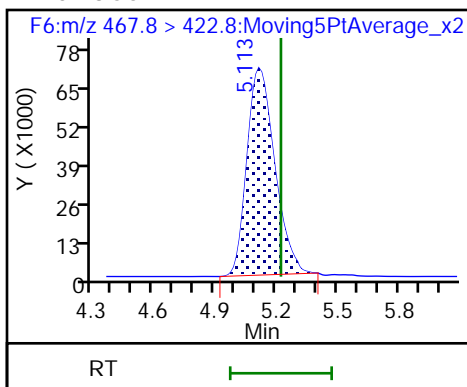
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

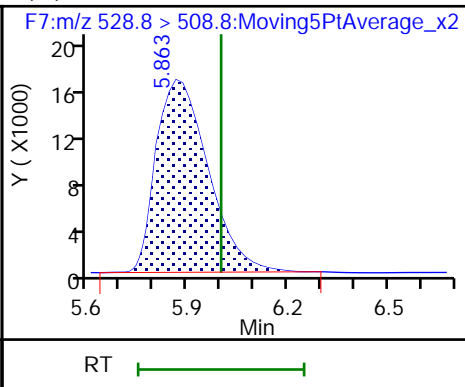
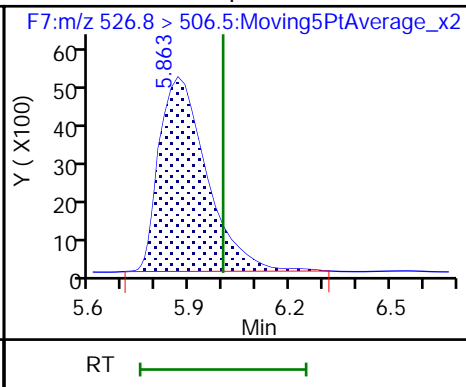
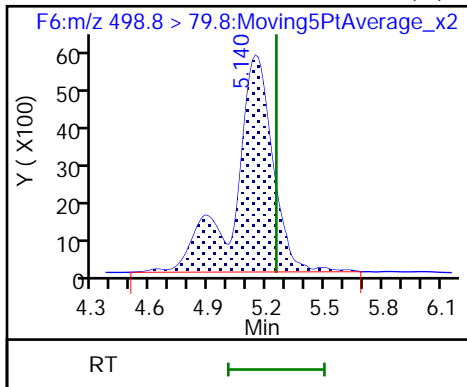
19 Perfluorononanoic acid

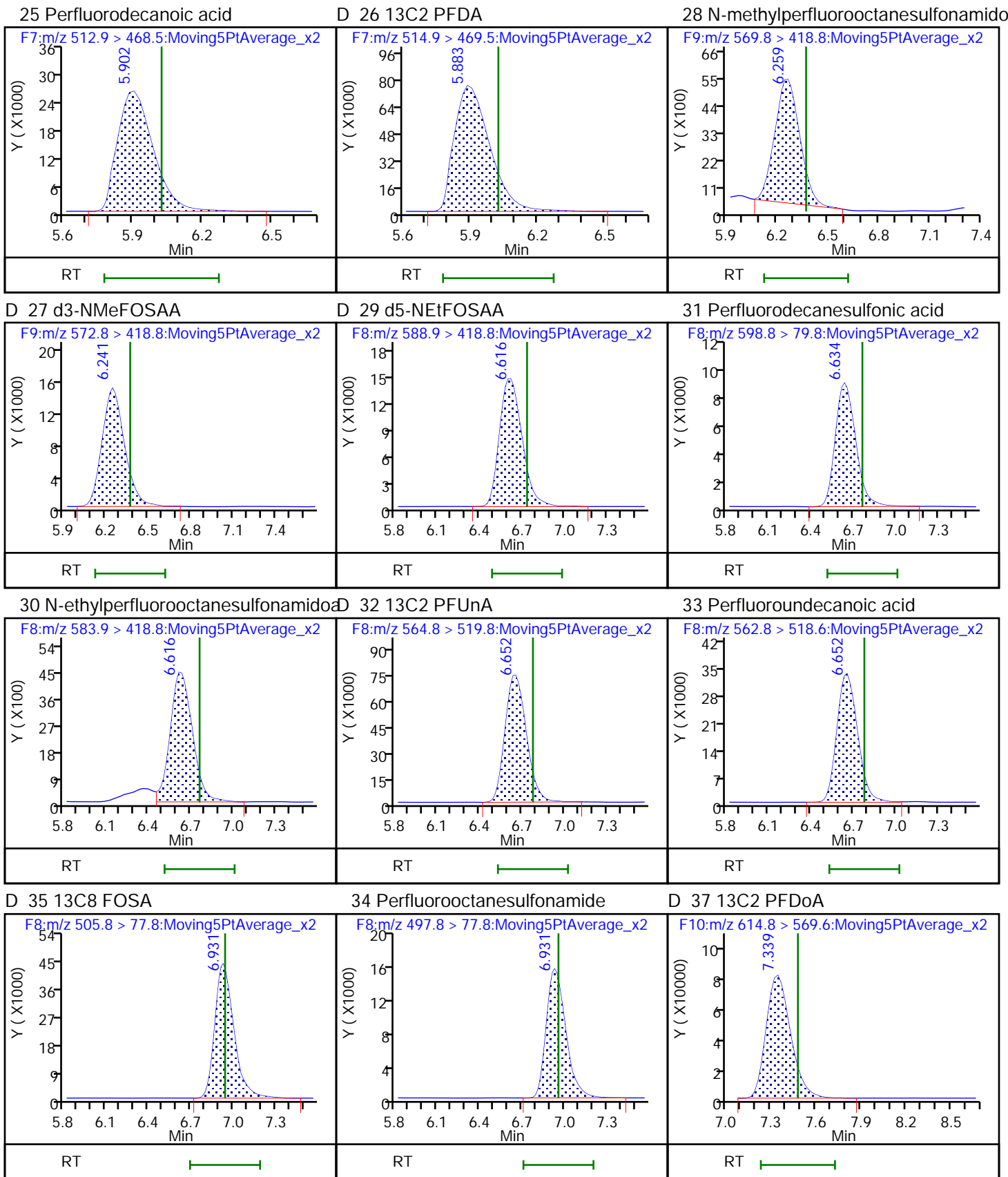
D 22 13C4 PFOS (M)



21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfonyl (M) M2-8:2 FTS

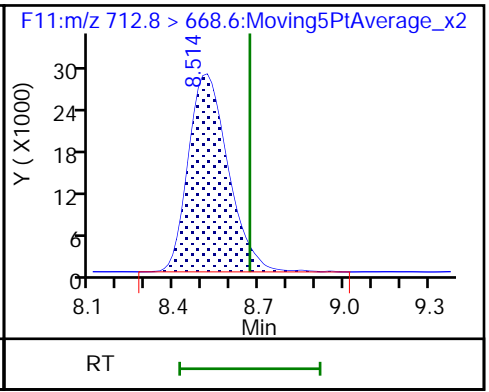
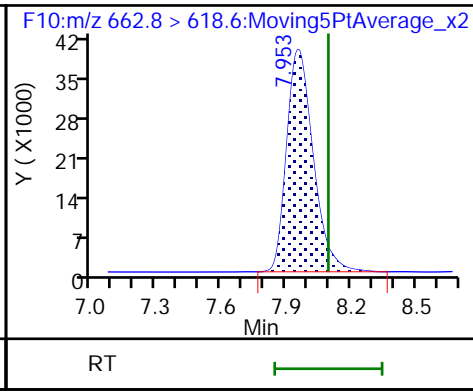
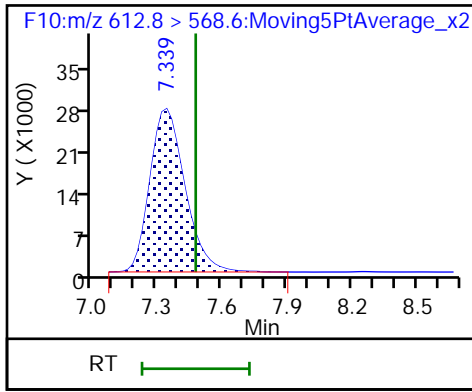




36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

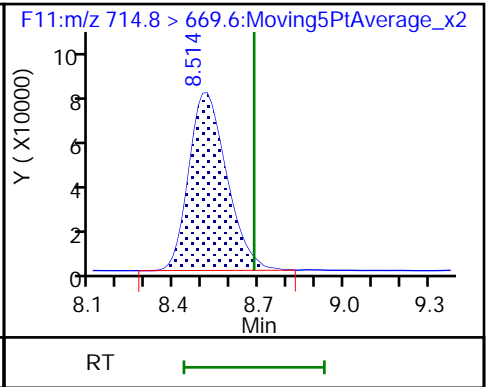
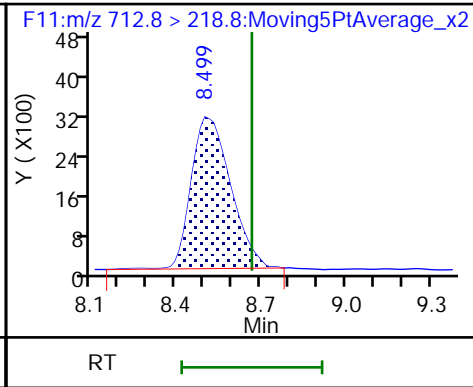
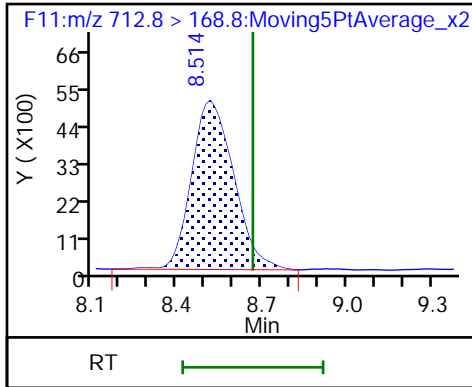
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

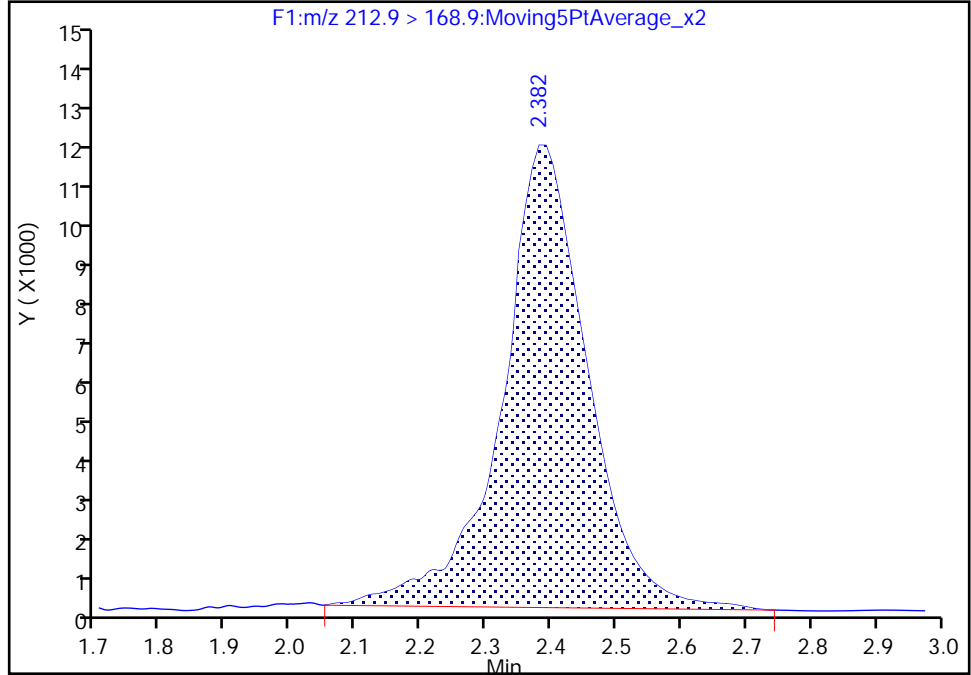
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Lims ID: CCV L4
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 82
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

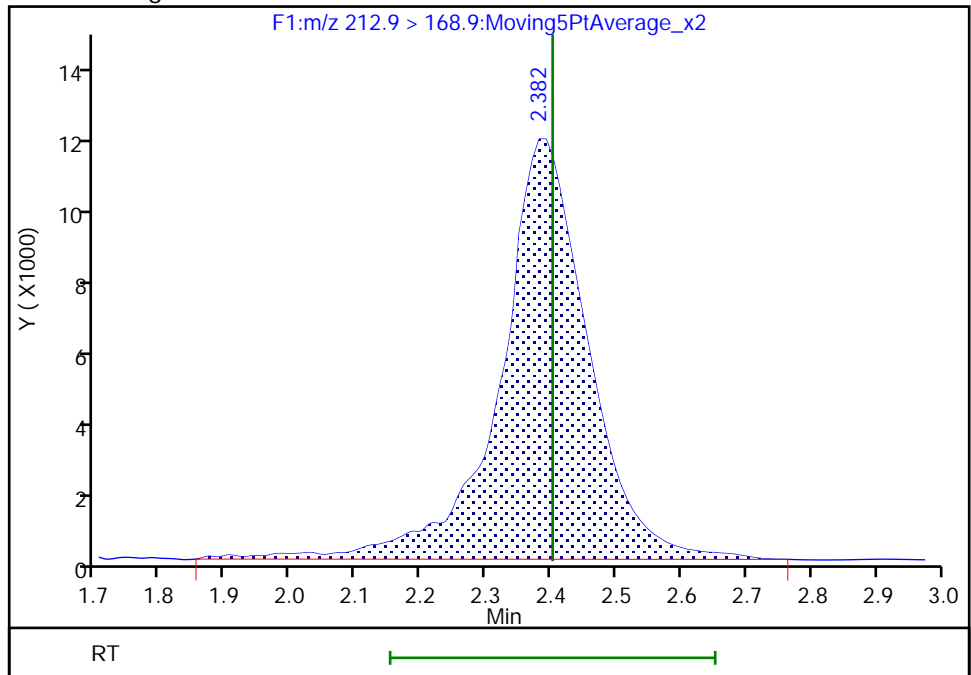
RT: 2.38
Area: 108077
Amount: 19.954901
Amount Units: ng/ml

Processing Integration Results



RT: 2.38
Area: 112056
Amount: 20.696578
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:09:53
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 502 of 589

TestAmerica Burlington

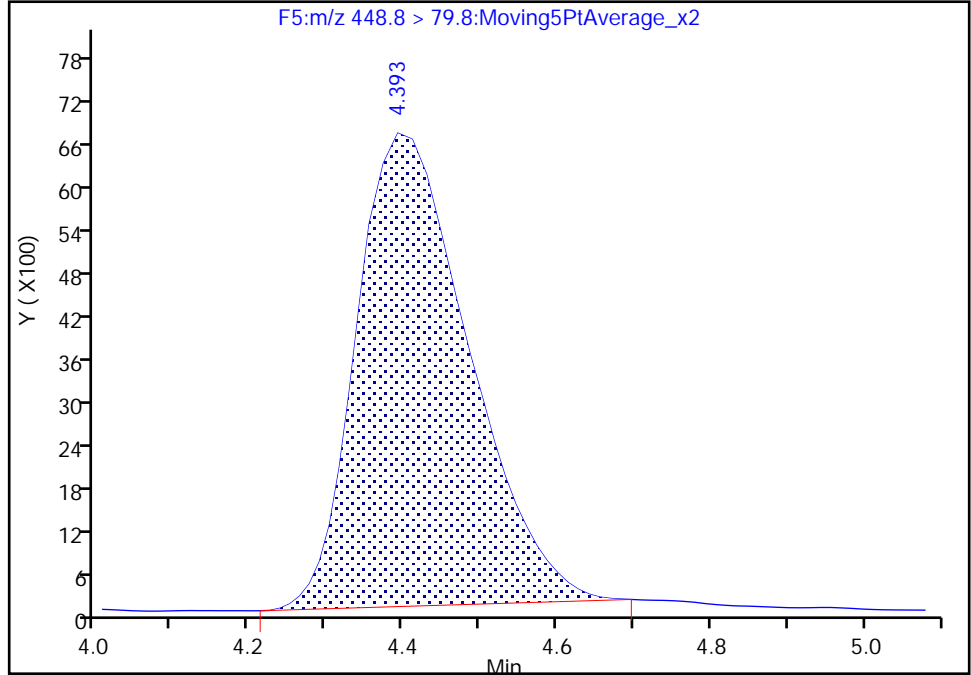
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Lims ID: CCV L4
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 82
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

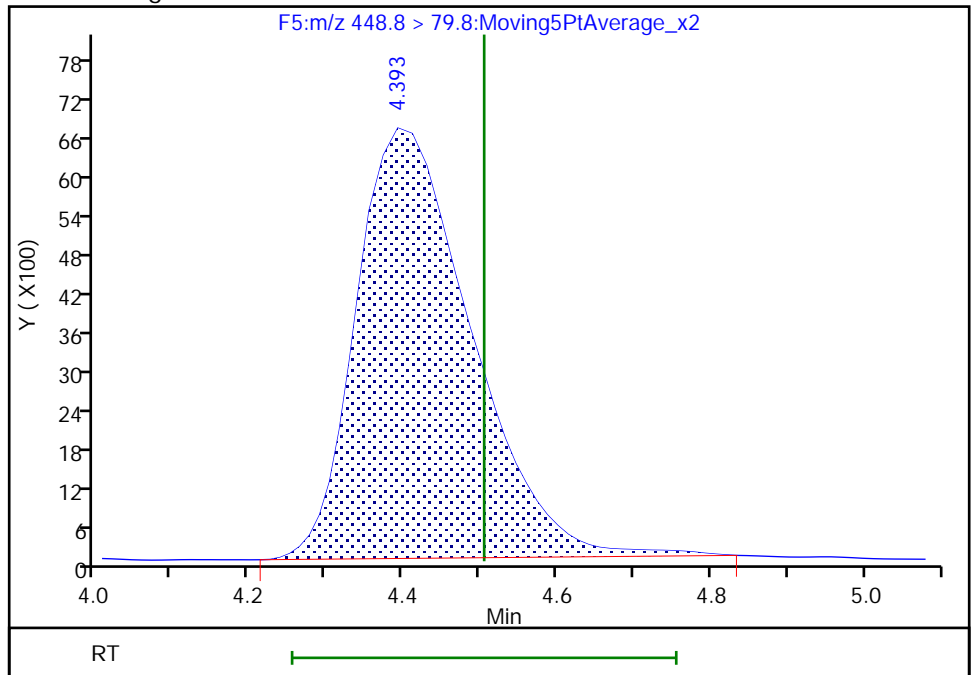
RT: 4.39
Area: 66978
Amount: 15.474980
Amount Units: ng/ml

Processing Integration Results



RT: 4.39
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Amount: 16.030503
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:10:11
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 503 of 589

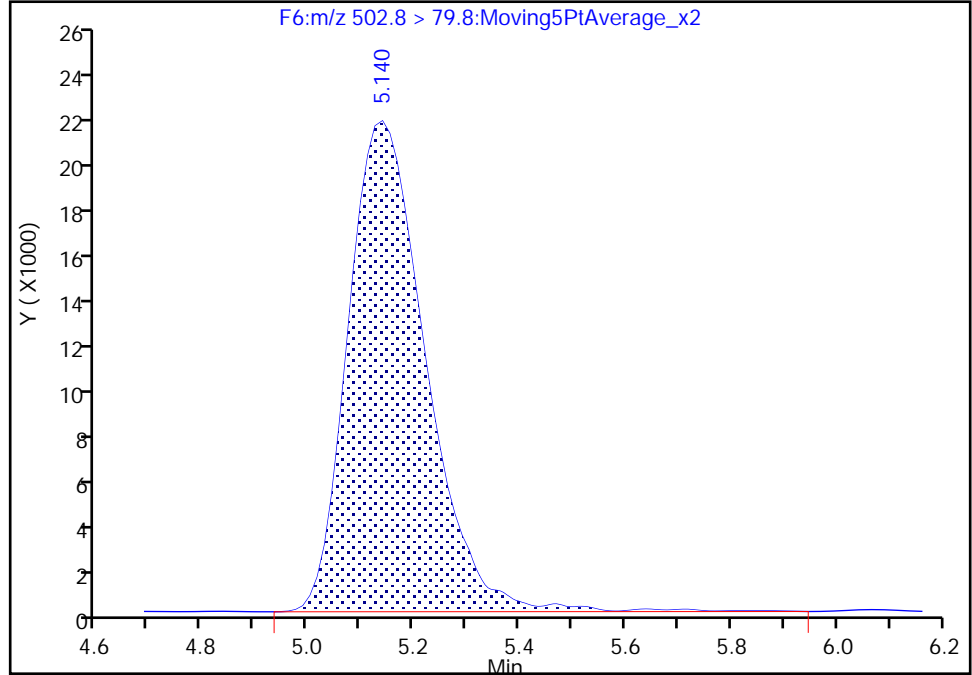
TestAmerica Burlington

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Lims ID: CCV L4
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 82
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

D 22 13C4 PFOS, CAS: STL00991
Signal: 1

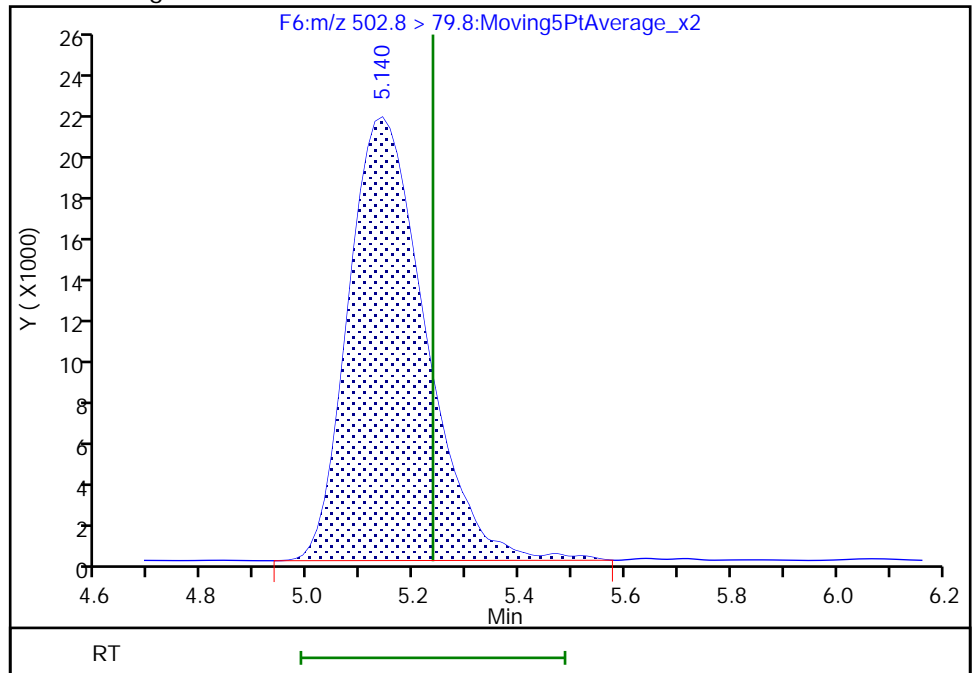
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Amount: 54.054115
Amount Units: ng/ml

Processing Integration Results



RT: 5.14
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Amount: 53.739070
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:10:31
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 504 of 589

TestAmerica Burlington

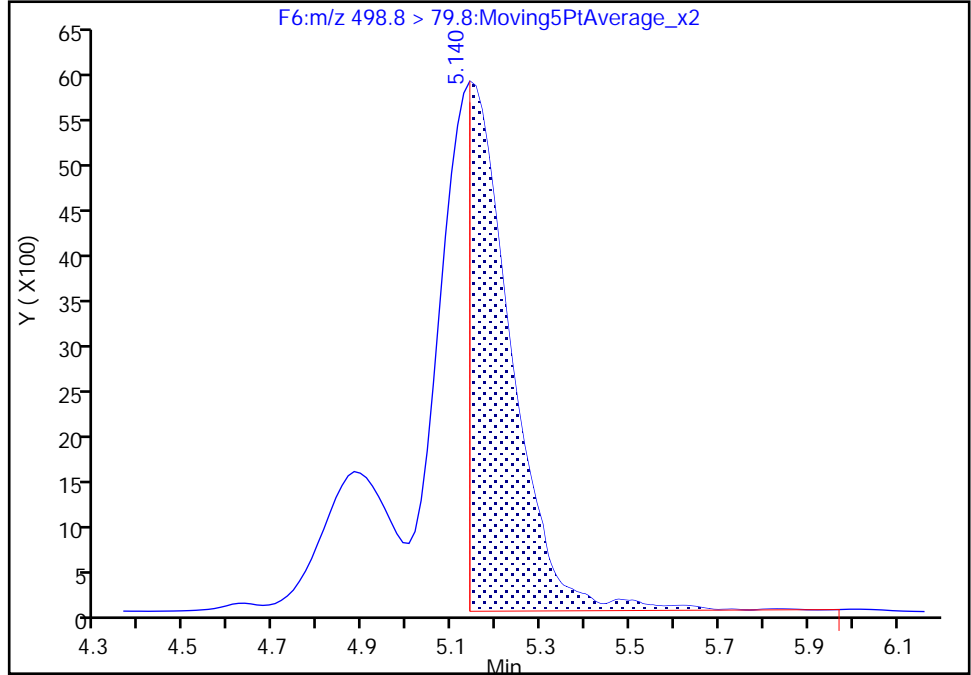
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Lims ID: CCV L4
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 82
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

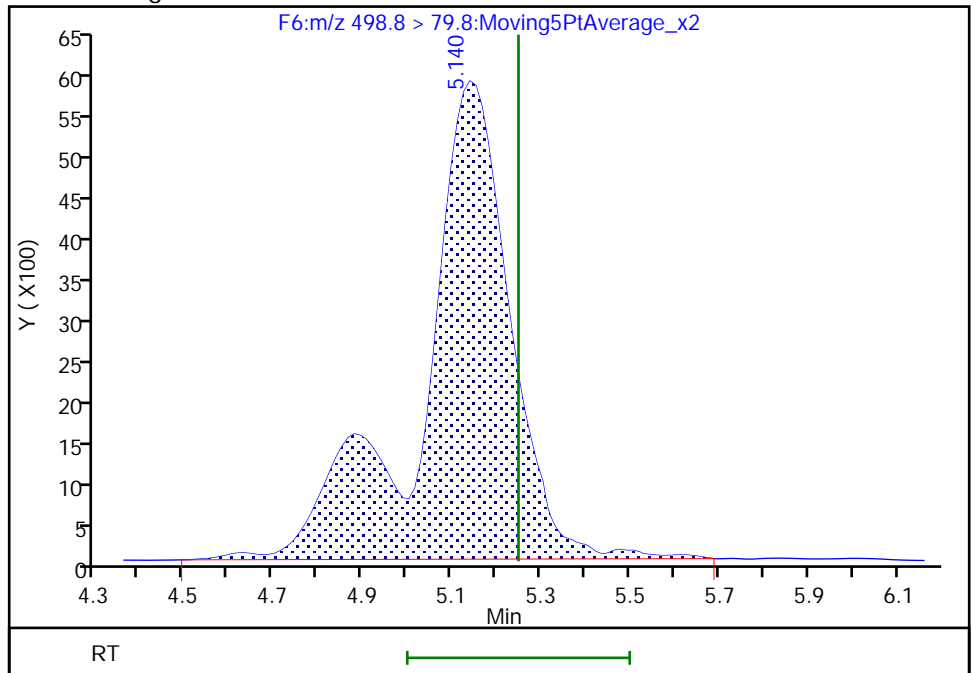
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Amount: 7.994363
Amount Units: ng/ml

Processing Integration Results



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Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

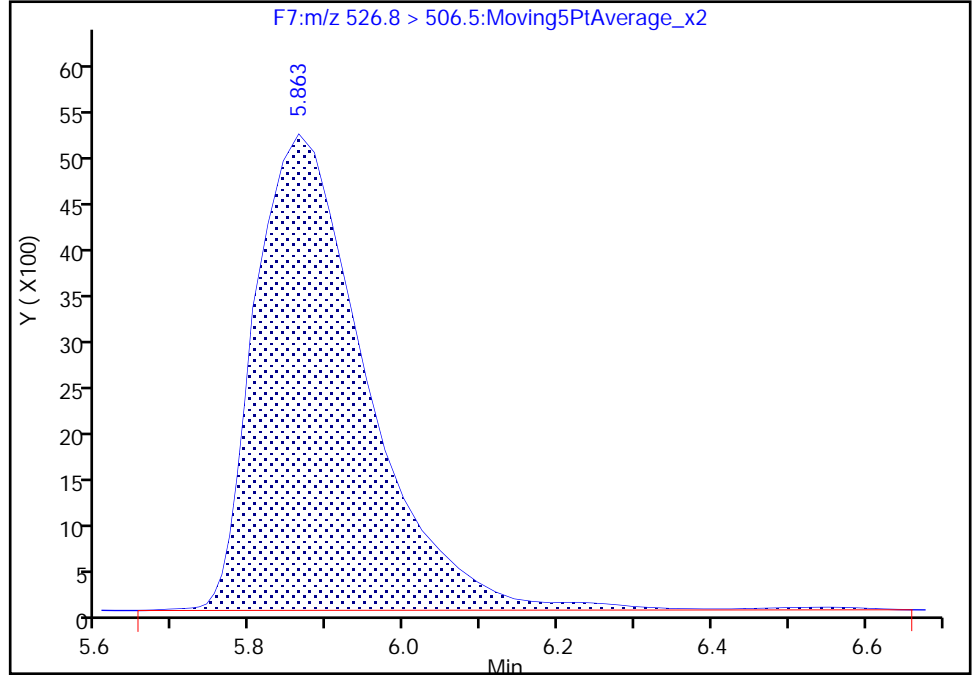
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Lims ID: CCV L4
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 82
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

23 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

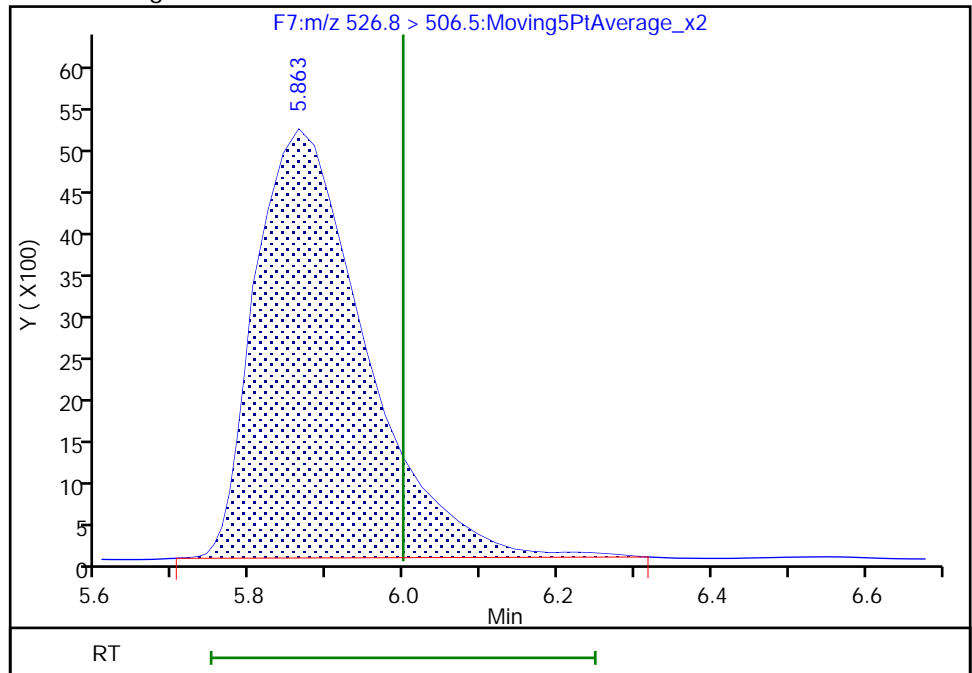
RT: 5.86
Area: 51954
Amount: 17.216813
Amount Units: ng/ml

Processing Integration Results



RT: 5.86
Area: 50891
Amount: 16.864550
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:10:43
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 200-138726/1-A
 Matrix: Water Lab File ID: PF010719A57.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 250 (mL) Date Analyzed: 01/08/2019 08:02
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	0.41
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.75
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.24
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.32
335-67-1	Perfluorooctanoic acid (PFOA)	0.333	J	2.0	0.32
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.38
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.38
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.408	J	2.0	0.25
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.35
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.24
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.45
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.44
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.26
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.82
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.76
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.53
754-91-6	Perfluorooctanesulfonamide (PFOSA)	ND		2.0	0.56
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	0.45
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	0.70
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	1.0
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	0.56

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 200-138726/1-A
 Matrix: Water Lab File ID: PF010719A57.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 250 (mL) Date Analyzed: 01/08/2019 08:02
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	105		50-150
STL01892	13C4 PFHpA	78		50-150
STL00990	13C4 PFOA	80		50-150
STL00991	13C4 PFOS	102		50-150
STL00995	13C5 PFNA	80		50-150
STL00992	13C4 PFBA	73		25-150
STL00993	13C2 PFHxA	84		50-150
STL00996	13C2 PFDA	84		50-150
STL00997	13C2 PFUnA	80		50-150
STL00998	13C2 PFDoA	69		50-150
STL01056	13C8 FOSA	64		25-150
STL01893	13C5 PFPeA	103		25-150
STL02116	13C2 PFTeDA	60		50-150
STL02118	d3-NMeFOSAA	59		50-150
STL02117	d5-NEtFOSAA	72		50-150
STL02279	M2-6:2 FTS	146		25-150
STL02280	M2-8:2 FTS	87		25-150
STL02337	13C3 PFBS	105		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
 Lims ID: MB 200-138726/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 08-Jan-2019 08:02:54 ALS Bottle#: 0 Worklist Smp#: 57
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-057 MB 726
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 08-Jan-2019 16:18:48 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0327
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 16:09:31
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.382	2.402	-0.020	1.000	316198	36.7	73.4	114	M
D 3 13C5 PFPeA	267.7 > 222.6	2.801	2.818	-0.017	1.000	282485	51.7	103	1543	
D 6 13C3 PFBS	302.0 > 79.8	2.867	2.900	-0.033	1.000	219858	48.8	105	340	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.867	2.900	-0.033	1.000	338	0.0410		5.9	M
D 7 13C2 PFHxA	314.8 > 269.6	3.214	3.250	-0.036	1.000	411923	41.9	83.7	1850	
8 Perfluorohexanoic acid	312.8 > 268.6	3.189	3.250	-0.061	0.992	242	0.0283		2.3	M
D 9 13C4 PFHpA	366.9 > 321.8	3.726	3.782	-0.056	1.000	703219	39.0	78.0	443	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.759	3.782	-0.023	1.009	1063	0.0773		4.1	M
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.748	3.815	-0.067	0.997	915	-0.1278		17.9	M
D 11 18O2 PFHxS	402.9 > 83.8	3.759	3.826	-0.067	1.000	260089	49.9	105	355	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.411	-0.081	1.000	111625	69.4	146	767	
16 Perfluorooctanoic acid	412.9 > 368.8	4.355	4.449	-0.094	0.996	1816	0.1667		15.8	M
D 17 13C4 PFOA	416.9 > 371.8	4.374	4.468	-0.094	1.000	550279	40.0	80.0	1081	
* 15 13C2 PFOA	414.9 > 369.8	4.374	4.468	-0.094		50.0			1007	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
18 Perfluoroheptanesulfonic acid										M
448.8 > 79.8	4.411	4.505	-0.094	0.856	342	0.0764			4.4	M
D 20 13C5 PFNA										
467.8 > 422.8	5.127	5.222	-0.095	1.000	745377	40.2		80.3	664	
19 Perfluorononanoic acid										M
462.8 > 418.8	5.113	5.222	-0.109	0.997	309	0.0189			3.7	M
D 22 13C4 PFOS										M
502.8 > 79.8	5.154	5.236	-0.082	1.000	224171	48.6		102	880	M
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	5.168	5.250	-0.082	1.003	654	0.1349			7.1	M
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.998	-0.116	1.000	181602	41.7		87.0	904	
23 1H,1H,2H,2H-perfluorodecanesulfoni										M
526.8 > 506.5	5.882	5.998	-0.116	1.000	28	0.009154			0.5	M
D 26 13C2 PFDA										
514.9 > 469.5	5.902	6.022	-0.120	1.000	806818	42.2		84.3	5320	
25 Perfluorodecanoic acid										M
512.9 > 468.5	5.882	6.022	-0.140	0.997	762	0.0468			4.8	M
28 N-methylperfluorooctanesulfonamido										M
569.8 > 418.8	6.277	6.367	-0.090	1.003	225	0.0716			1.1	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.367	-0.108	1.000	144623	29.6		59.2	967	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.734	-0.100	1.000	149779	36.1		72.2	648	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.777	-0.107	1.000	794241	39.9		79.8	4935	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.652	6.777	-0.125	0.997	3325	0.2040			61.4	
D 35 13C8 FOSA										
505.8 > 77.8	6.917	6.945	-0.028	1.000	283263	31.9		63.7	2247	
D 37 13C2 PFDaA										
614.8 > 569.6	7.362	7.474	-0.112	1.000	864219	34.3		68.6	1663	
36 Perfluorododecanoic acid										M
612.8 > 568.6	7.362	7.474	-0.112	1.000	314	0.0212			2.6	M
38 Perfluorotridecanoic acid										M
662.8 > 618.6	7.962	8.097	-0.135	0.933	986	0.0729			17.6	M
39 Perfluorotetradecanoic acid										M
712.8 > 668.6	8.484	8.666	-0.182	0.995	623	0.0462	Target=1.00		4.3	M
712.8 > 168.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
712.8 > 218.8	8.666	8.666	0.0	0.000	0		0.00(0.90-1.10)			
D 40 13C2 PFTeDA										
714.8 > 669.6	8.529	8.681	-0.152	1.000	691608	29.9		59.8	773	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d

Injection Date: 08-Jan-2019 08:02:54

Instrument ID: LC410

Lims ID: MB 200-138726/1-A

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 57

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

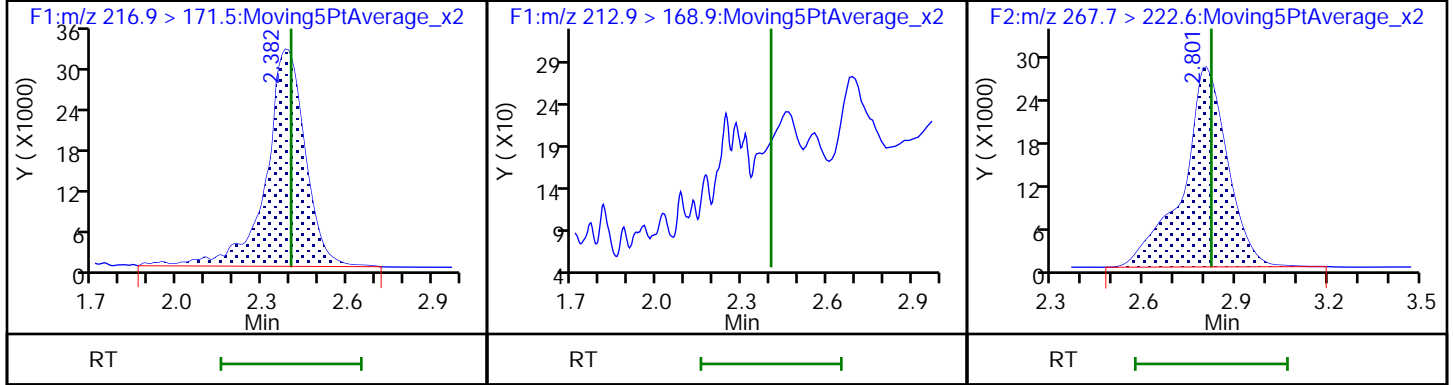
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (ND)

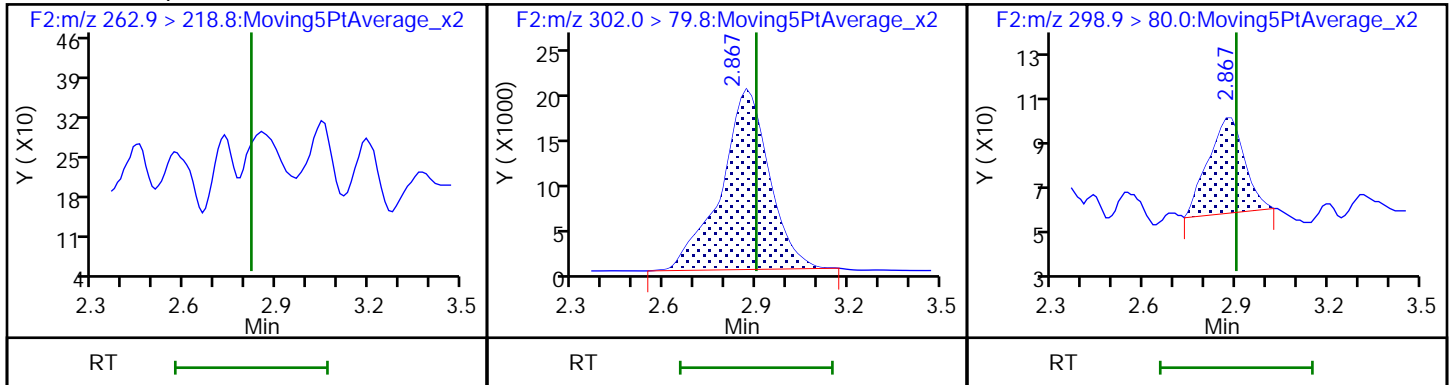
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (ND)

D 6 13C3 PFBS

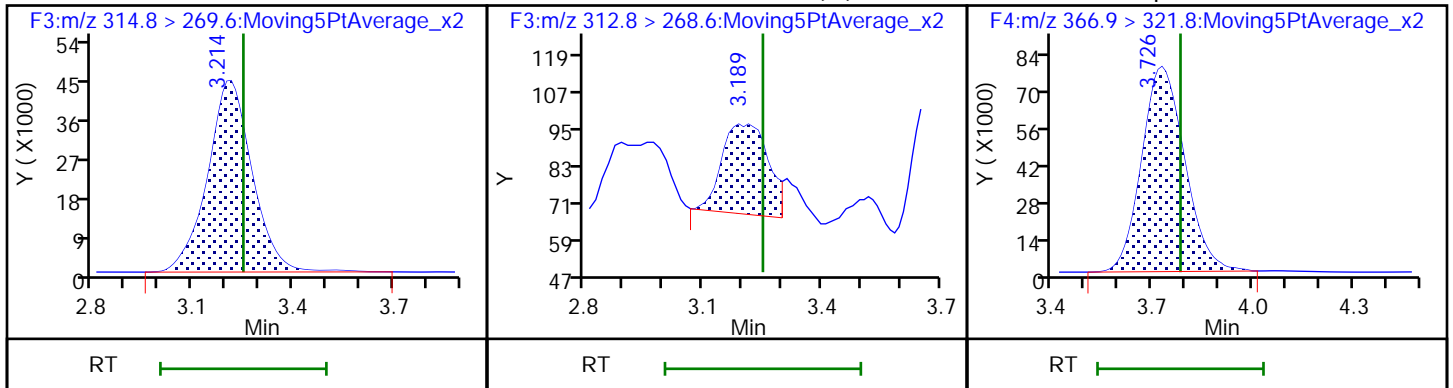
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA

8 Perfluorohexanoic acid (M)

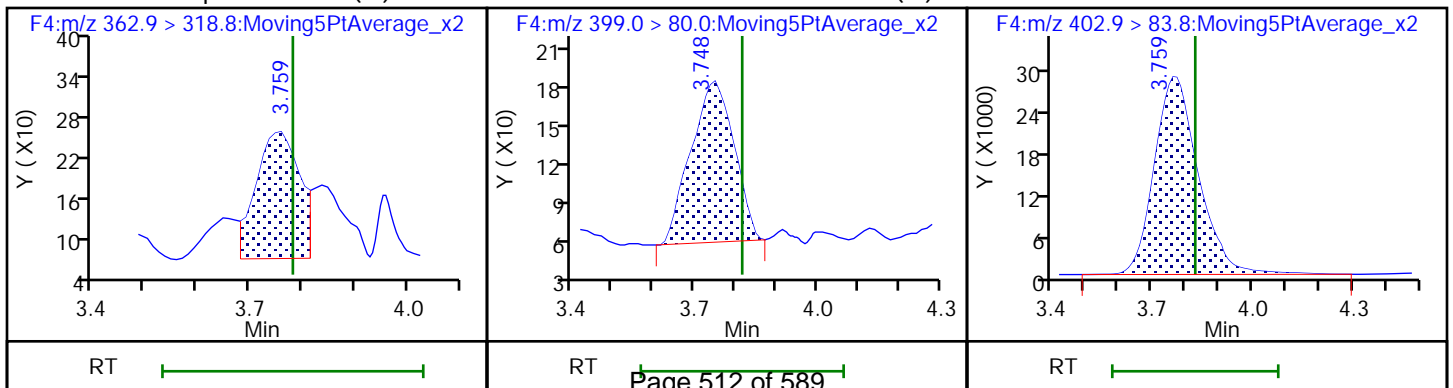
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (M)

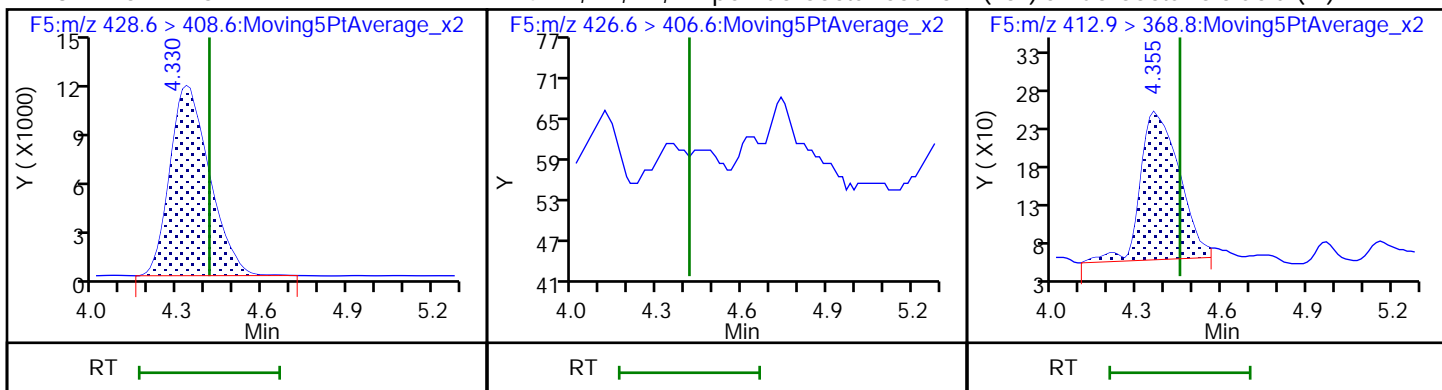
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

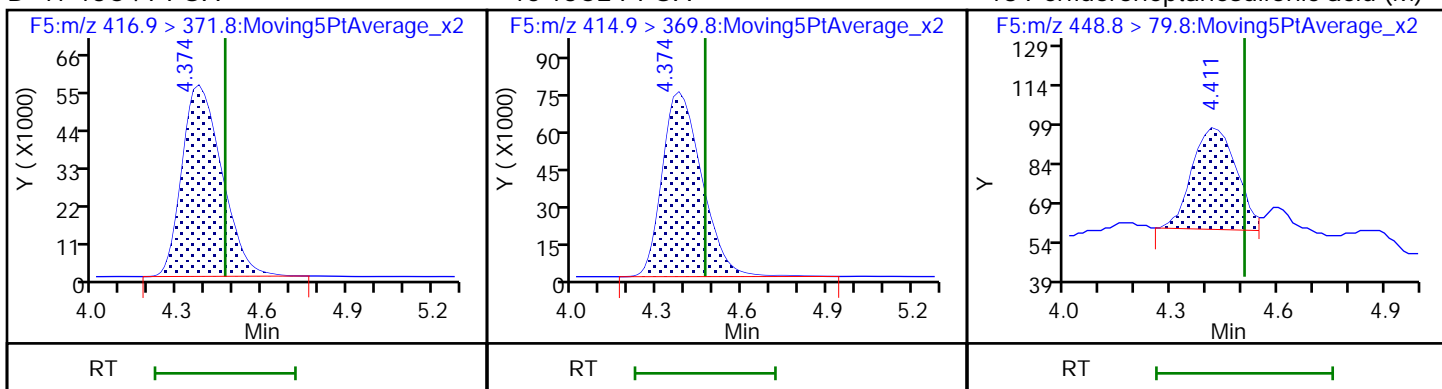
14 1H,1H,2H,2H-perfluorooctanesulfoni (M) ~~ND~~ Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA

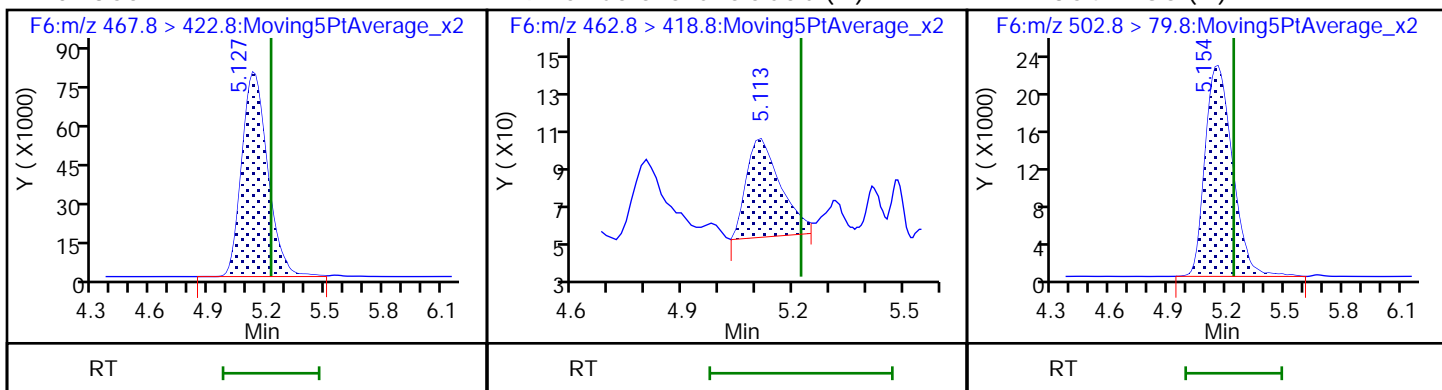
18 Perfluoroheptanesulfonic acid (M)



D 20 13C5 PFNA

19 Perfluorononanoic acid (M)

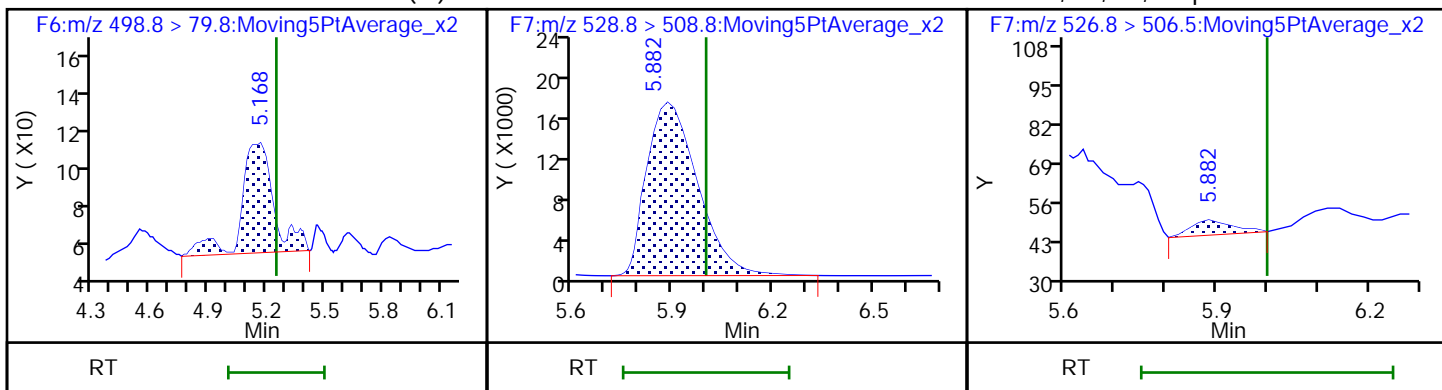
D 22 13C4 PFOS (M)



21 Perfluorooctanesulfonic acid (M)

D 24 M2-8:2 FTS

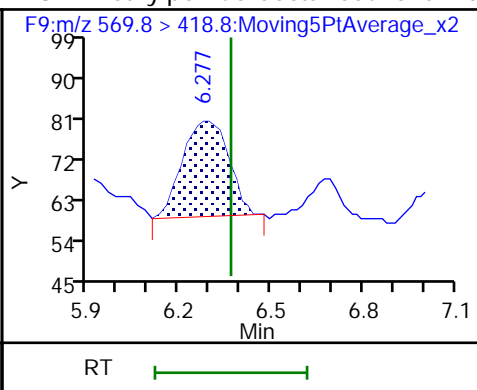
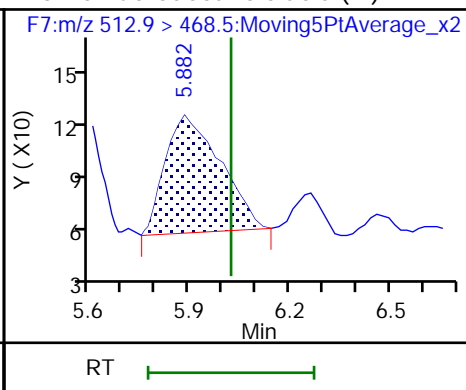
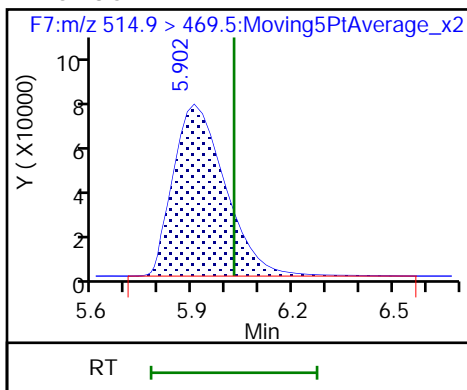
23 1H,1H,2H,2H-perfluorodecanesulfoni (M)



D 26 13C2 PFDA

25 Perfluorodecanoic acid (M)

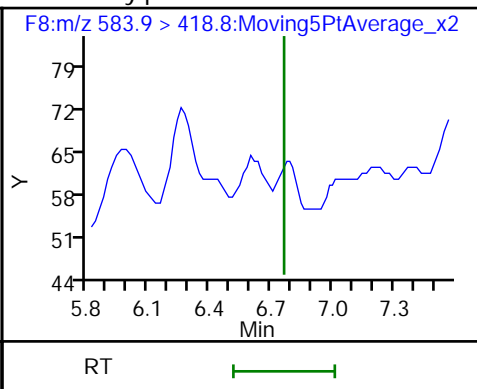
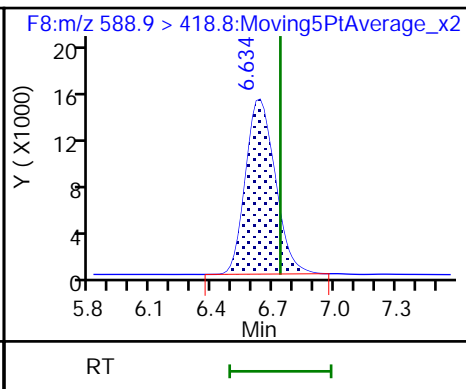
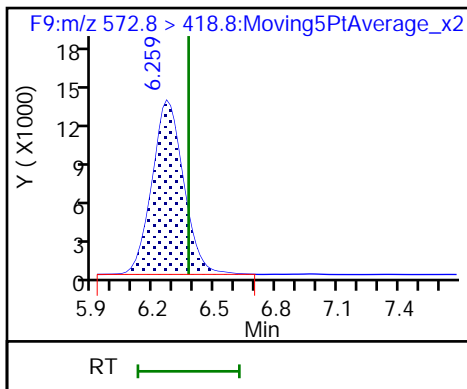
28 N-methylperfluorooctanesulfonamido (M)



D 27 d3-NMeFOSAA

D 29 d5-NEtFOSAA

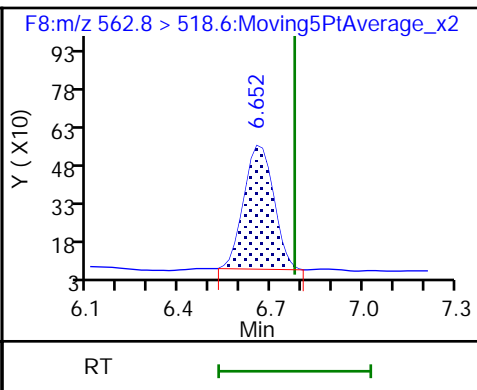
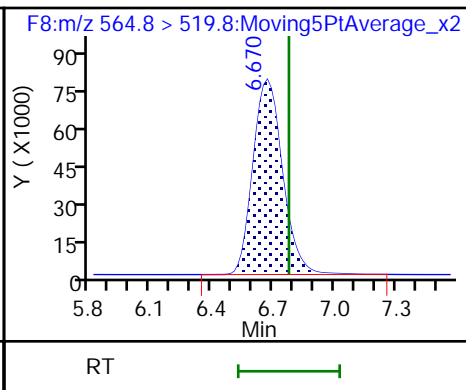
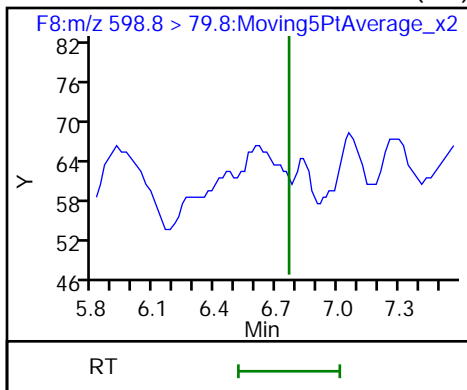
30 N-ethylperfluorooctanesulfonamidoa (ND)



31 Perfluorodecanesulfonic acid (ND)

D 32 13C2 PFUnA

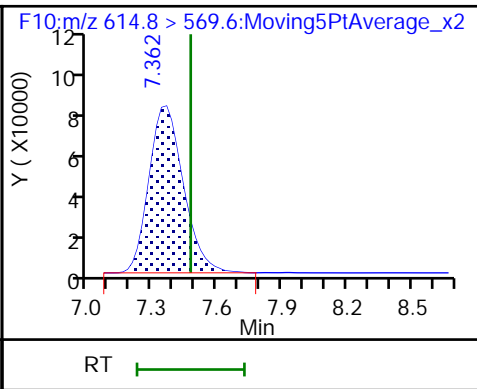
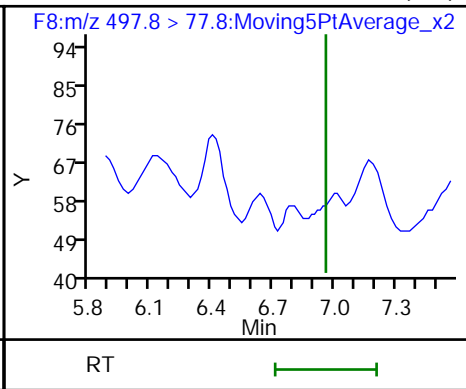
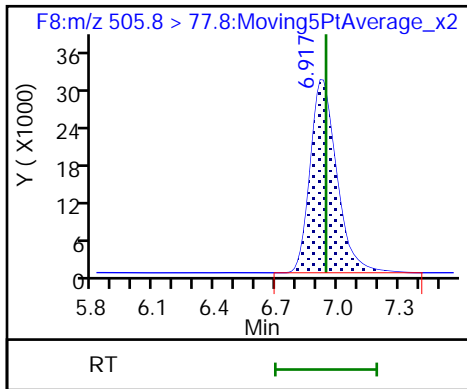
33 Perfluoroundecanoic acid

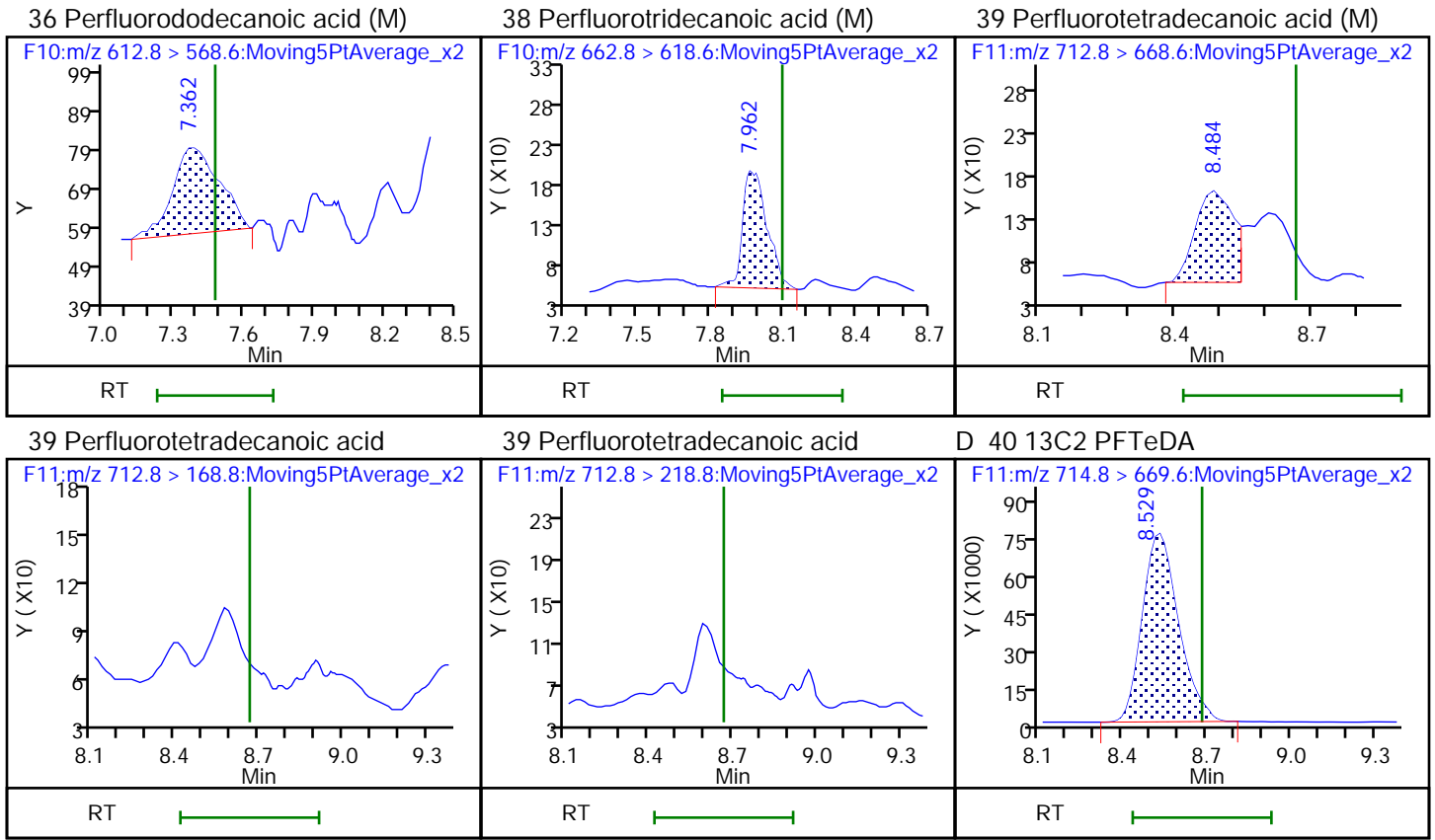


D 35 13C8 FOSA

34 Perfluorooctanesulfonamide (ND)

D 37 13C2 PFDaA





TestAmerica Burlington

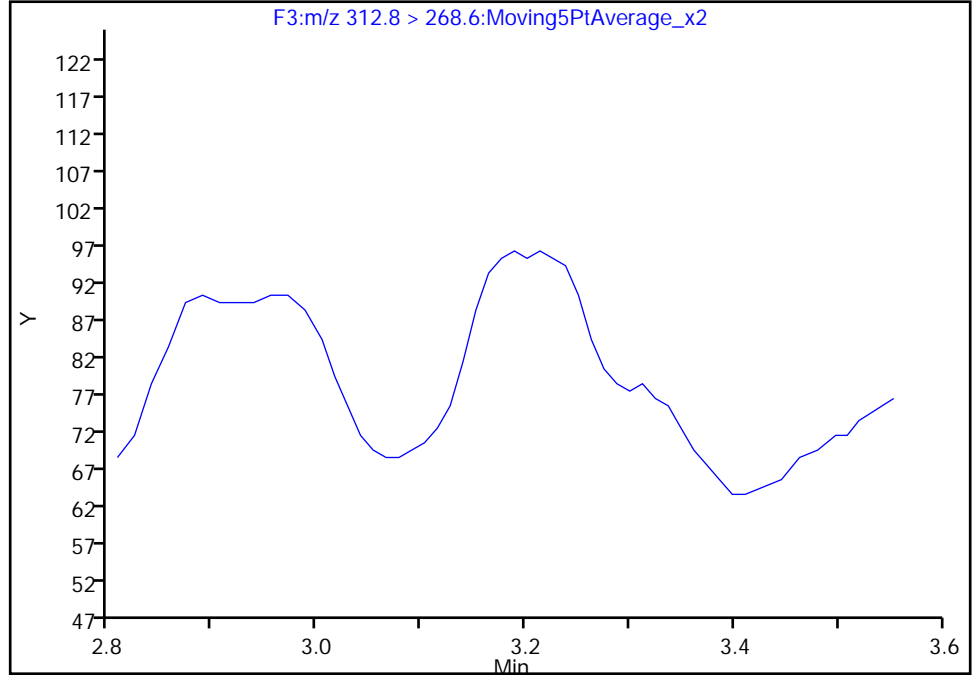
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Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

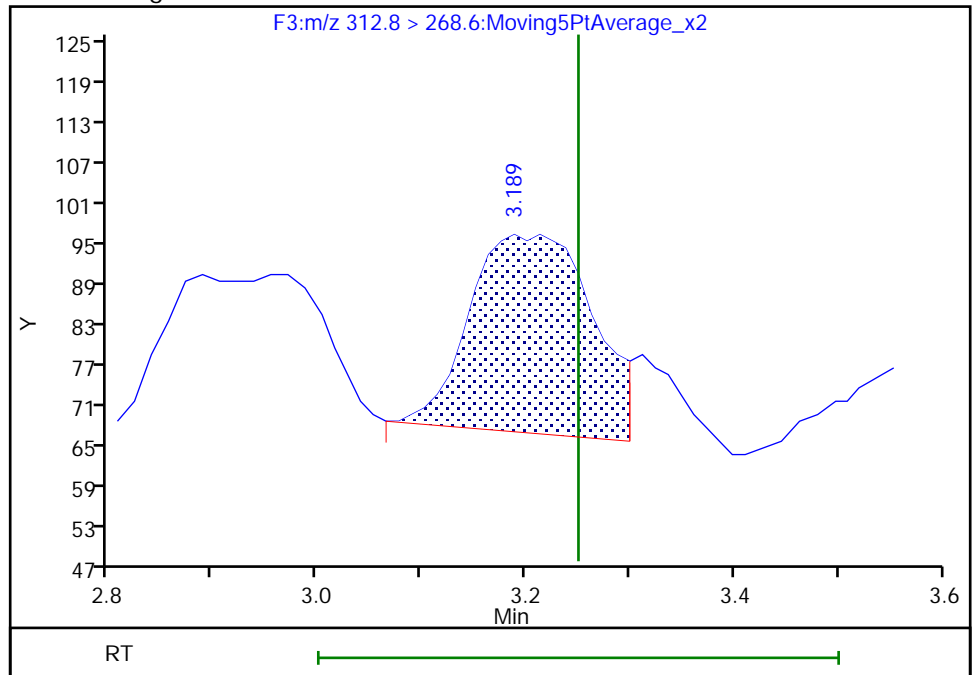
Not Detected
Expected RT: 3.25

Processing Integration Results



Manual Integration Results

RT: 3.19
Area: 242
Amount: 0.028311
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:18:07
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

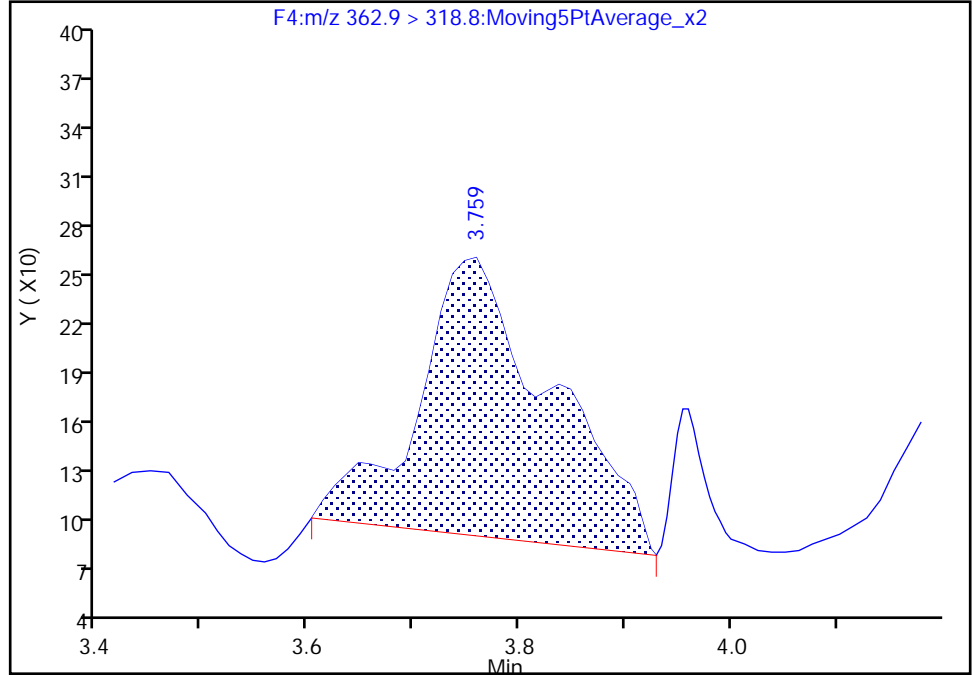
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Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

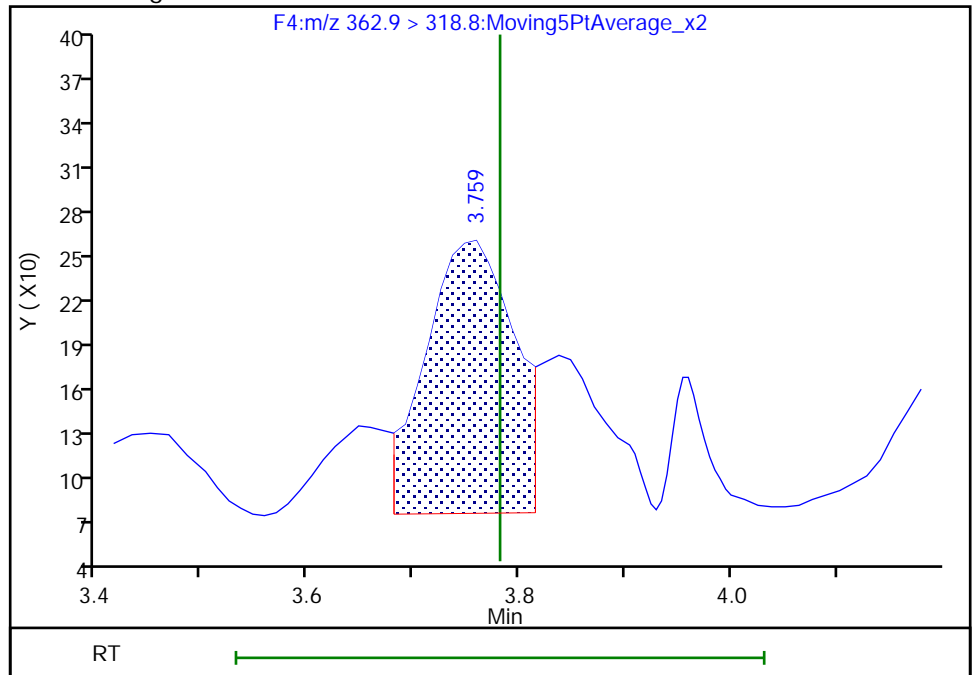
RT: 3.76
Area: 1503
Amount: 0.109331
Amount Units: ng/ml

Processing Integration Results



RT: 3.76
Area: 1063
Amount: 0.077324
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

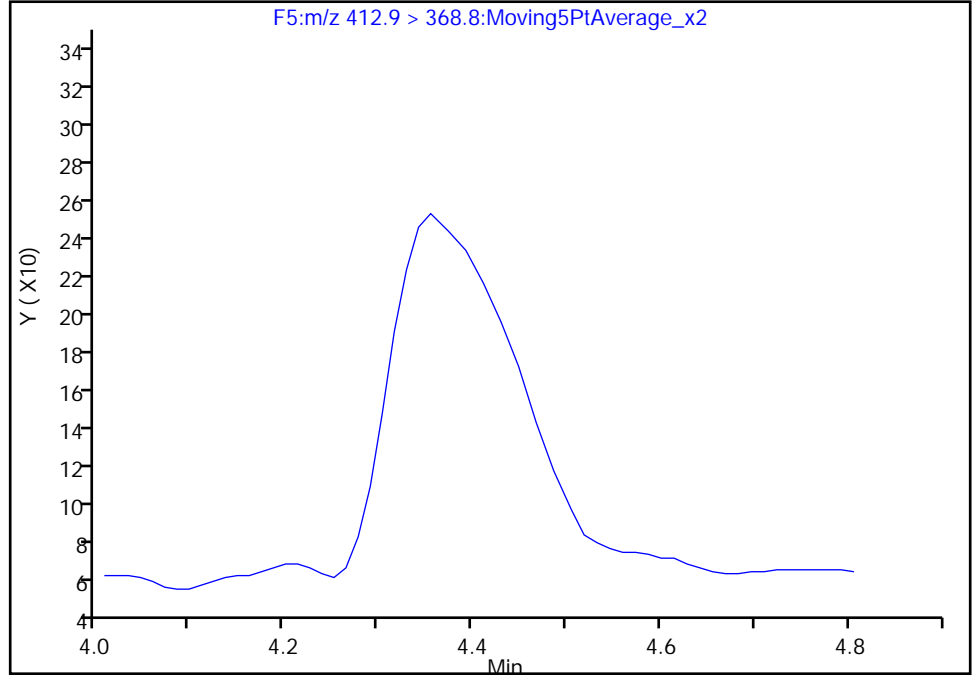
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Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

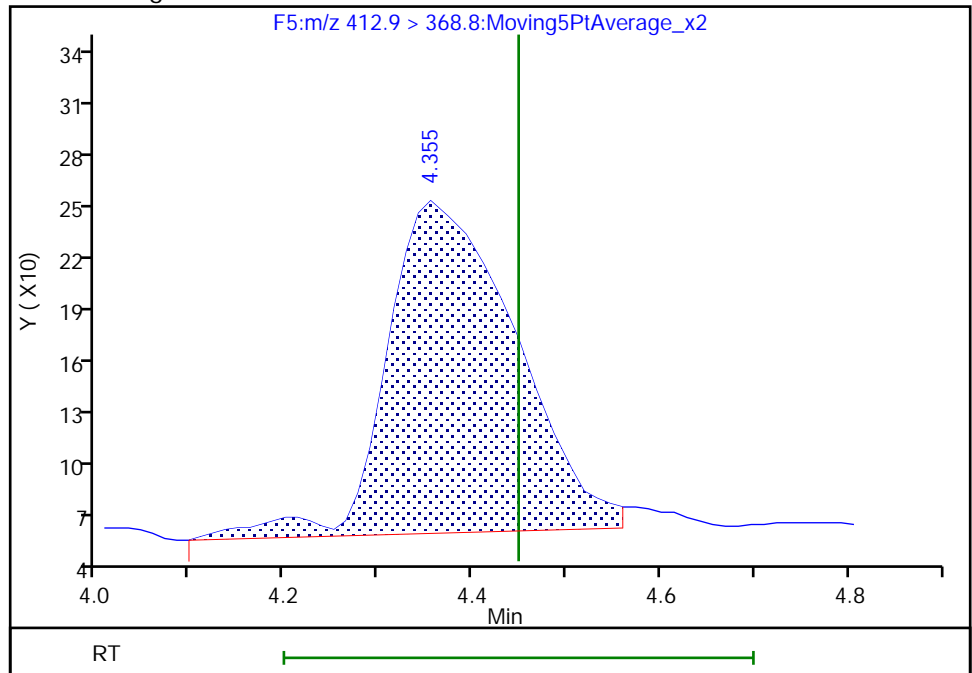
Not Detected
Expected RT: 4.45

Processing Integration Results



Manual Integration Results

RT: 4.36
Area: 1816
Amount: 0.166688
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:51
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Burlington

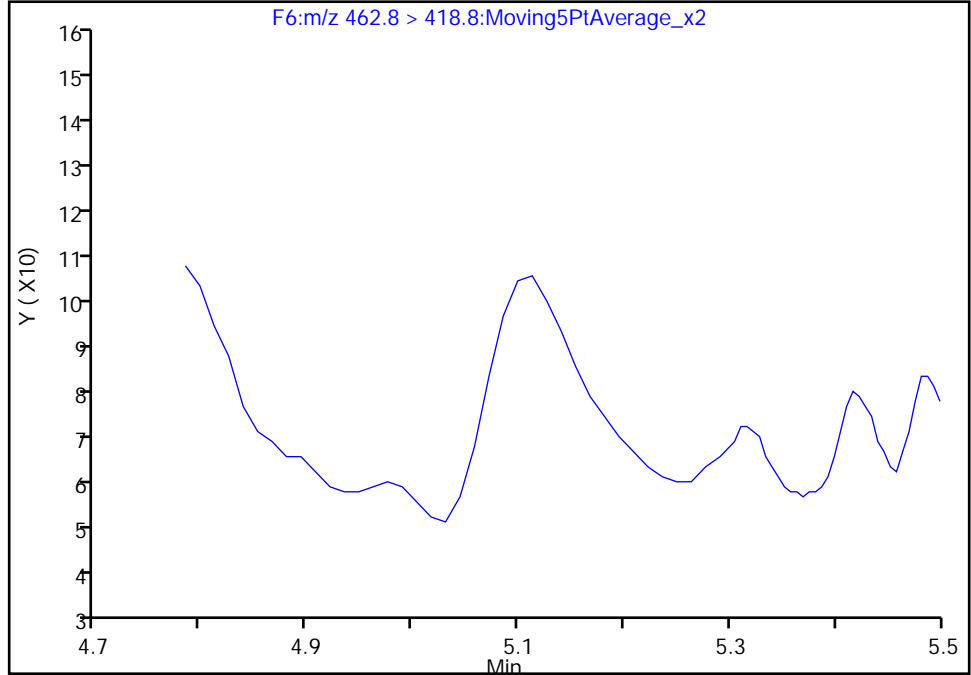
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

19 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

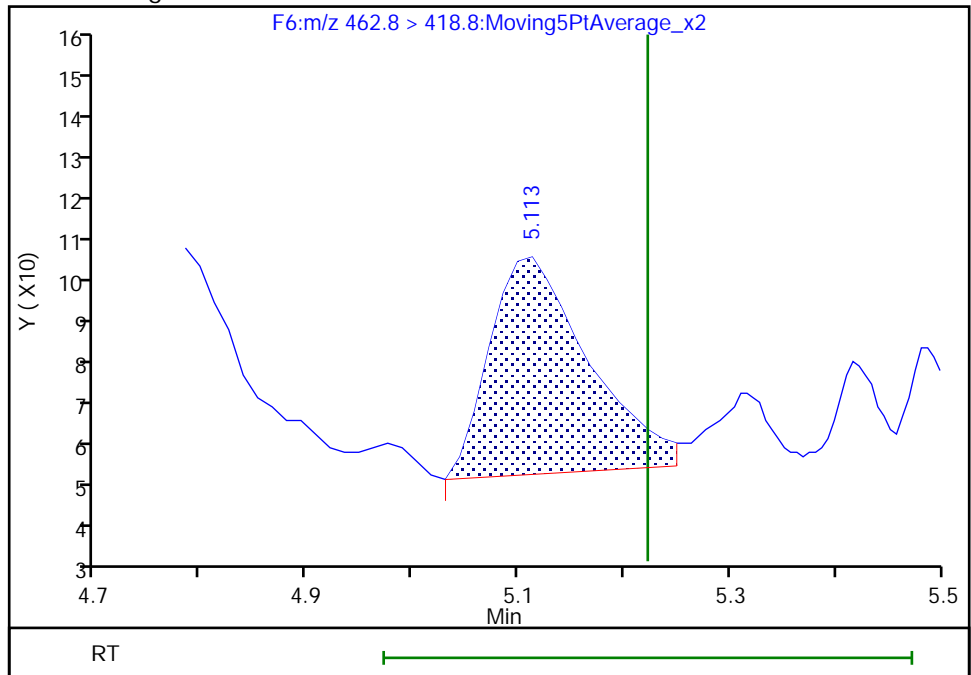
Not Detected
Expected RT: 5.22

Processing Integration Results



Manual Integration Results

RT: 5.11
Area: 309
Amount: 0.018856
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:32
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

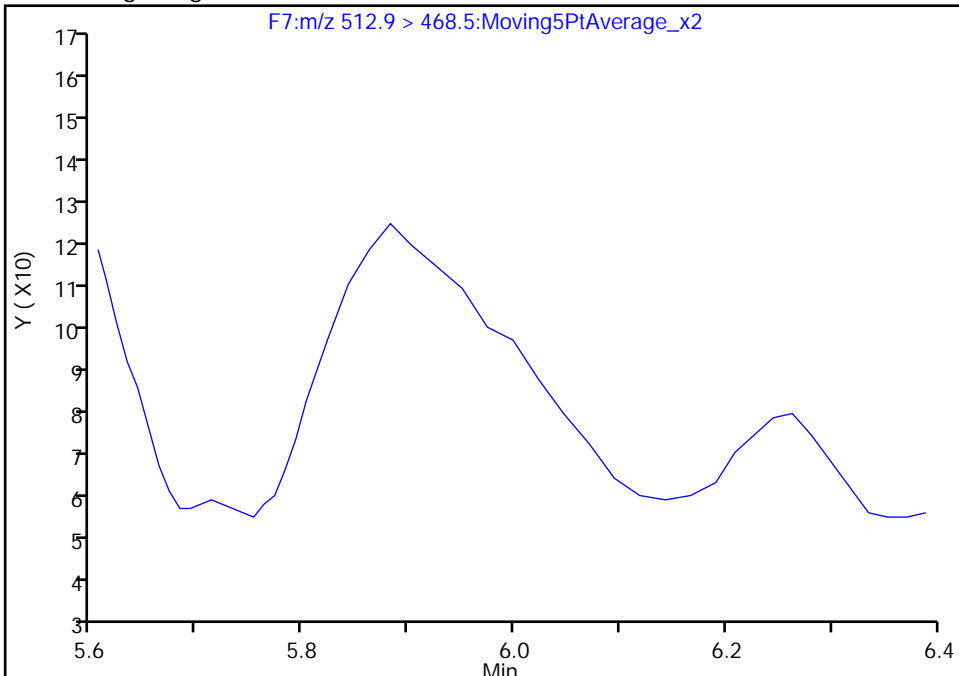
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

25 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

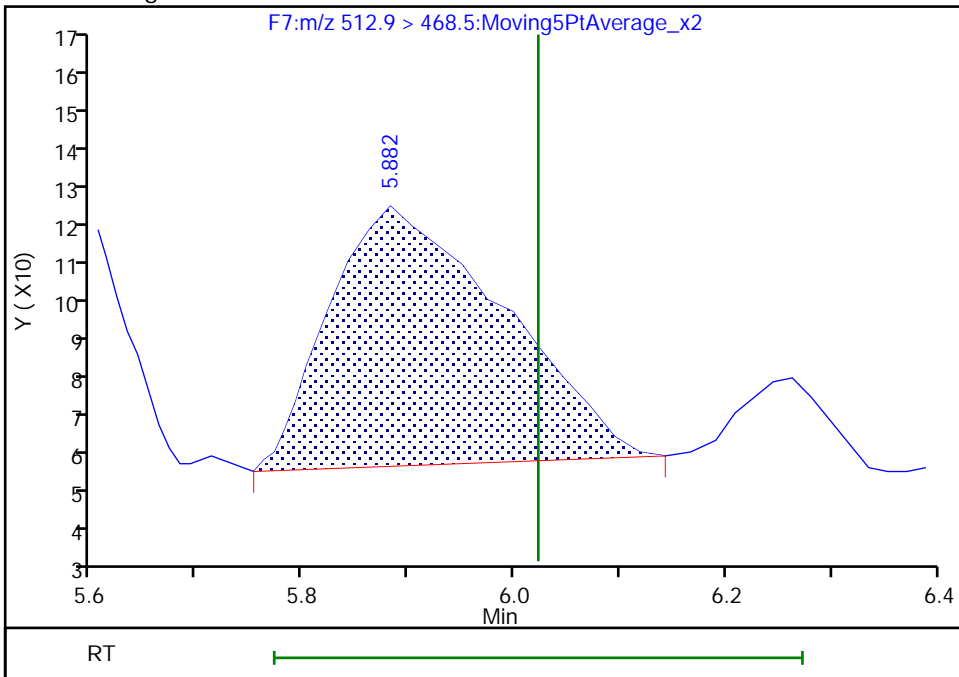
Not Detected
Expected RT: 6.02

Processing Integration Results



Manual Integration Results

RT: 5.88
Area: 762
Amount: 0.046779
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:14

Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Burlington

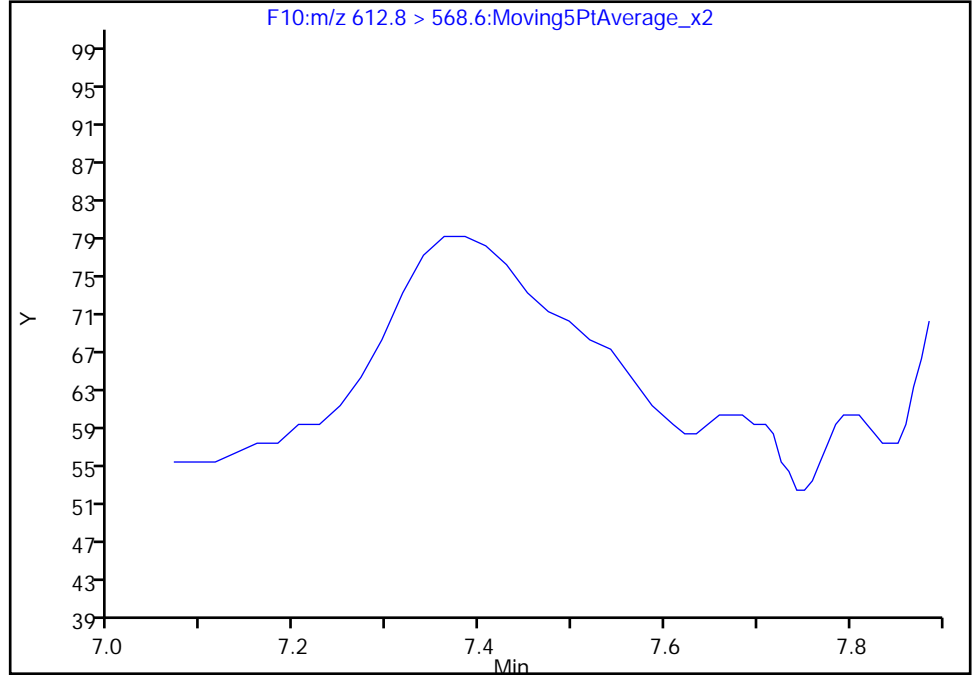
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

36 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

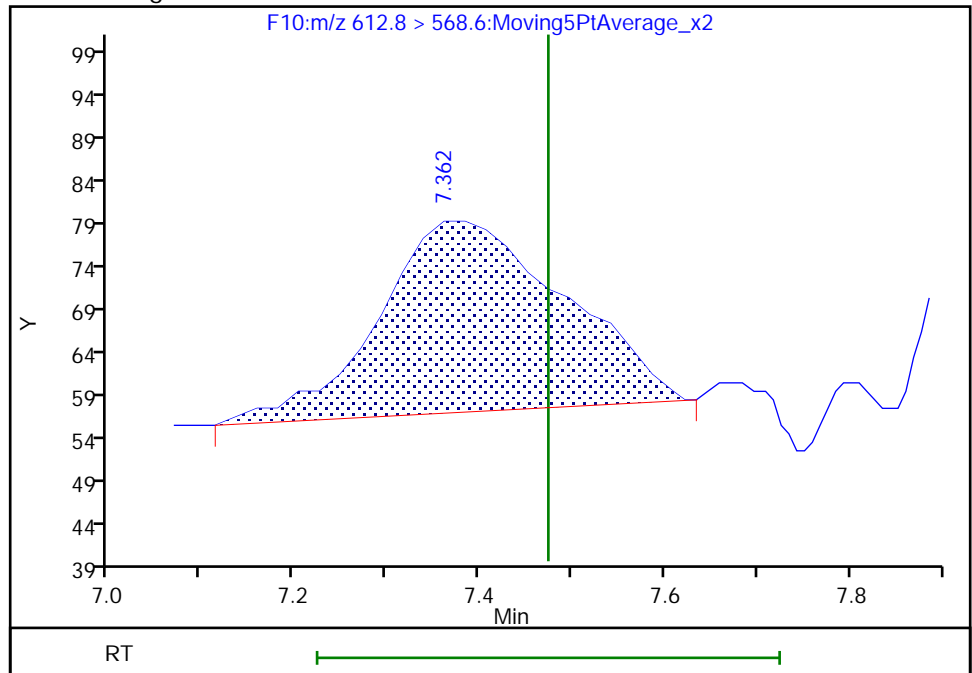
Not Detected
Expected RT: 7.47

Processing Integration Results



Manual Integration Results

RT: 7.36
Area: 314
Amount: 0.021163
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:01
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

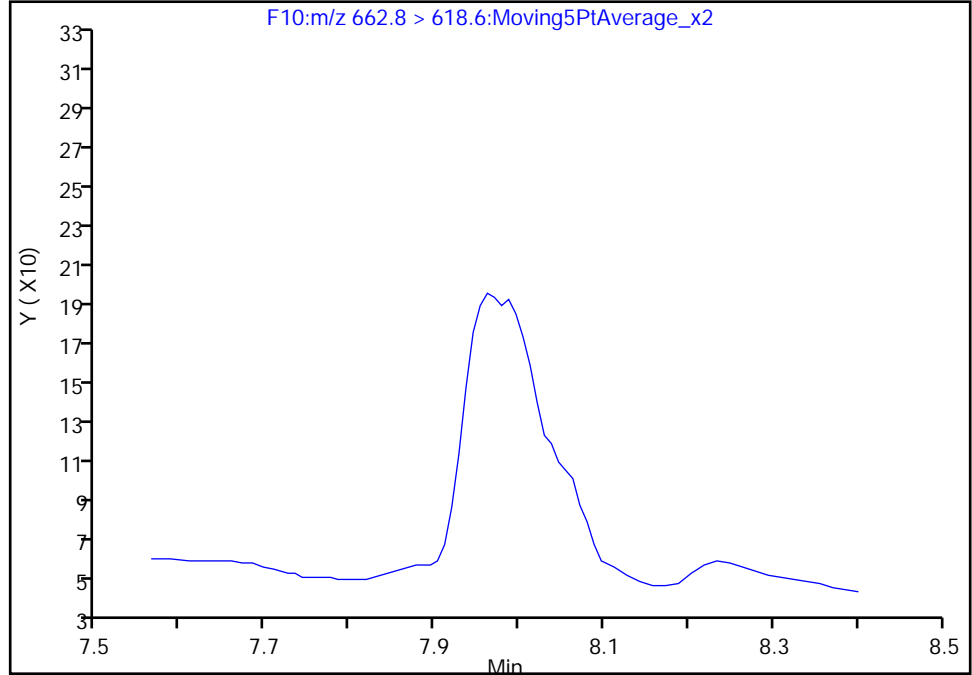
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Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F10:MRM

38 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

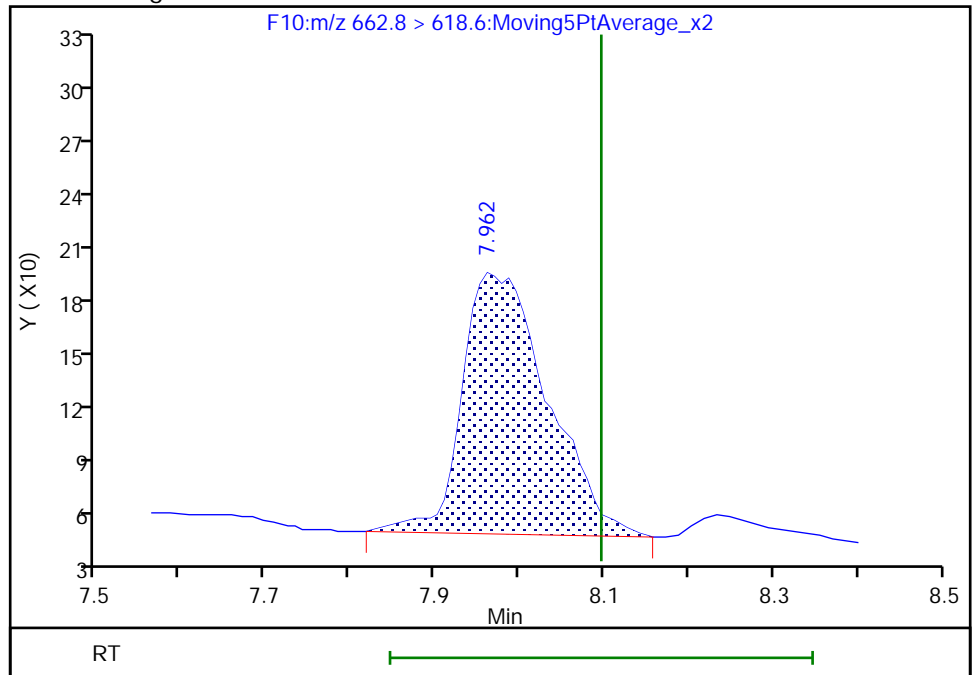
Not Detected
Expected RT: 8.10

Processing Integration Results



Manual Integration Results

RT: 7.96
Area: 986
Amount: 0.072926
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:16:57
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

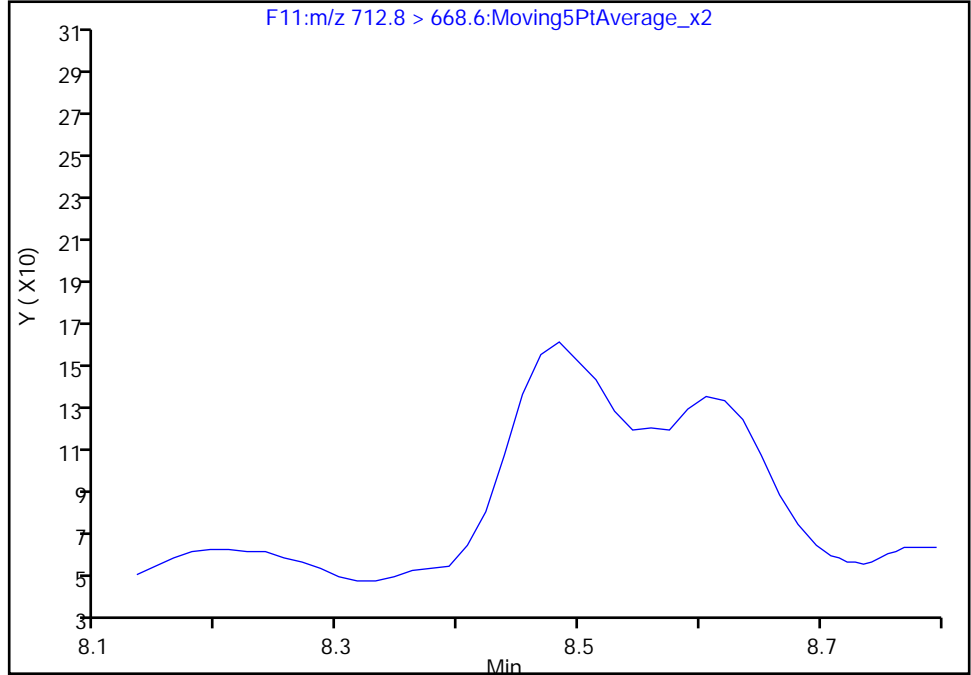
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F11:M/RM

39 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

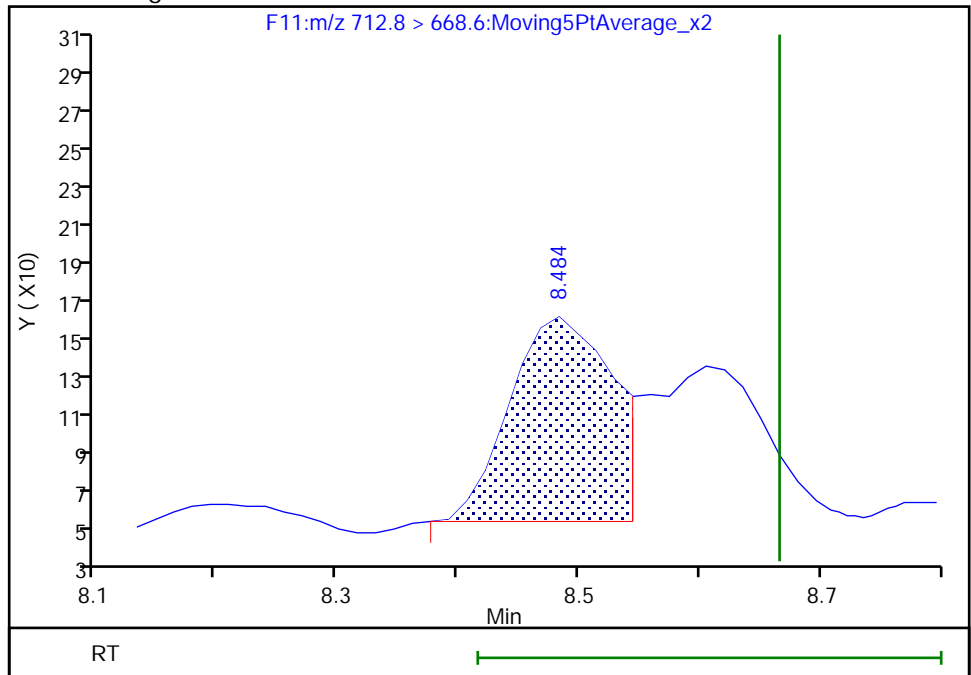
Not Detected
Expected RT: 8.67

Processing Integration Results



Manual Integration Results

RT: 8.48
Area: 623
Amount: 0.046205
Amount Units: ng/ml



TestAmerica Burlington

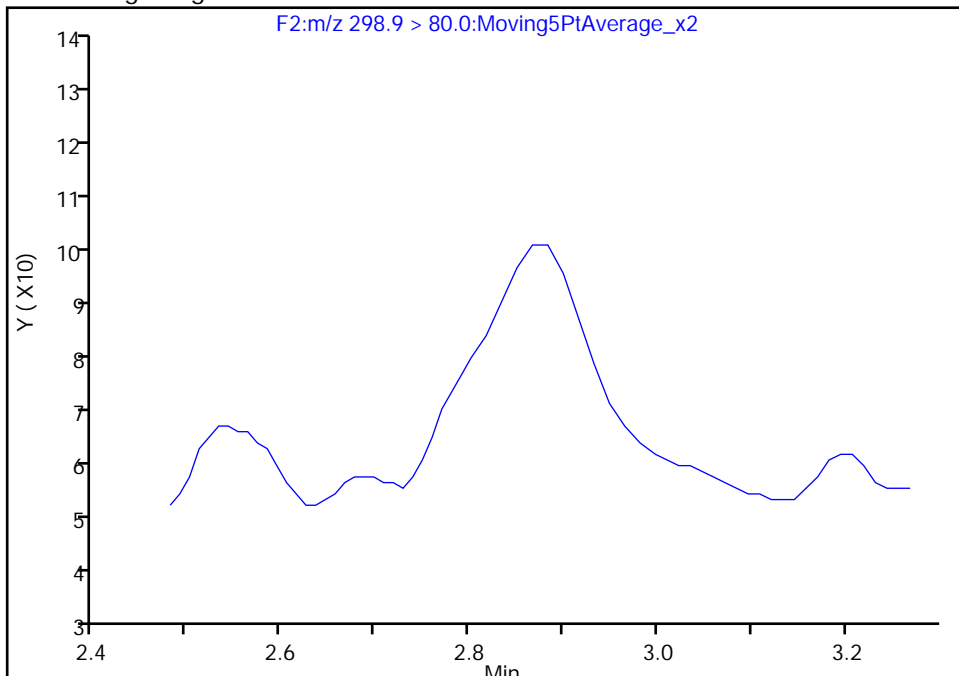
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

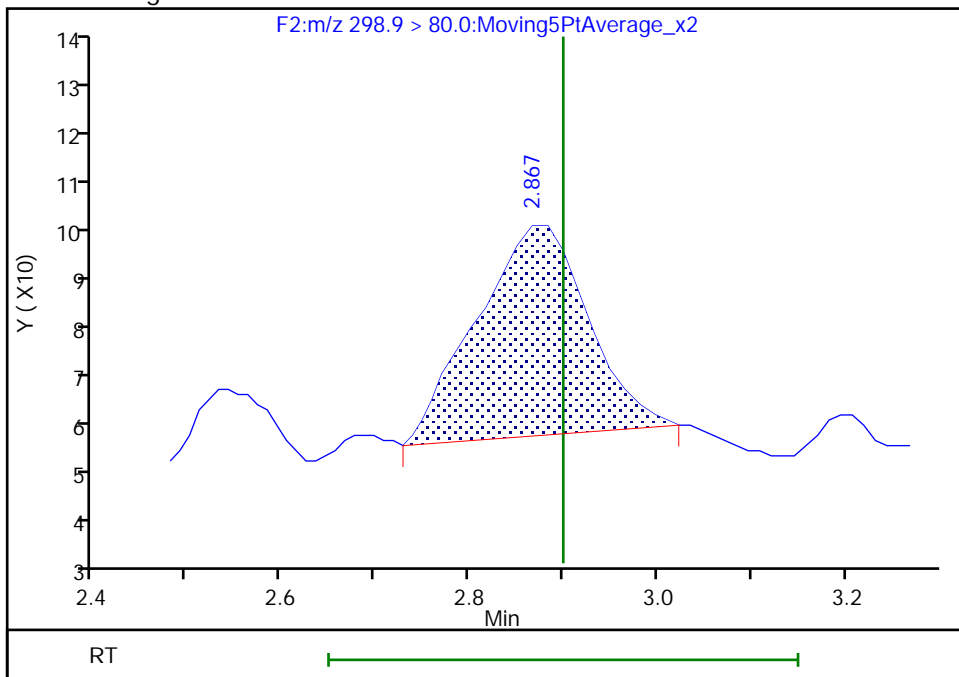
Not Detected
Expected RT: 2.90

Processing Integration Results



Manual Integration Results

RT: 2.87
Area: 338
Amount: 0.040966
Amount Units: ng/ml



TestAmerica Burlington

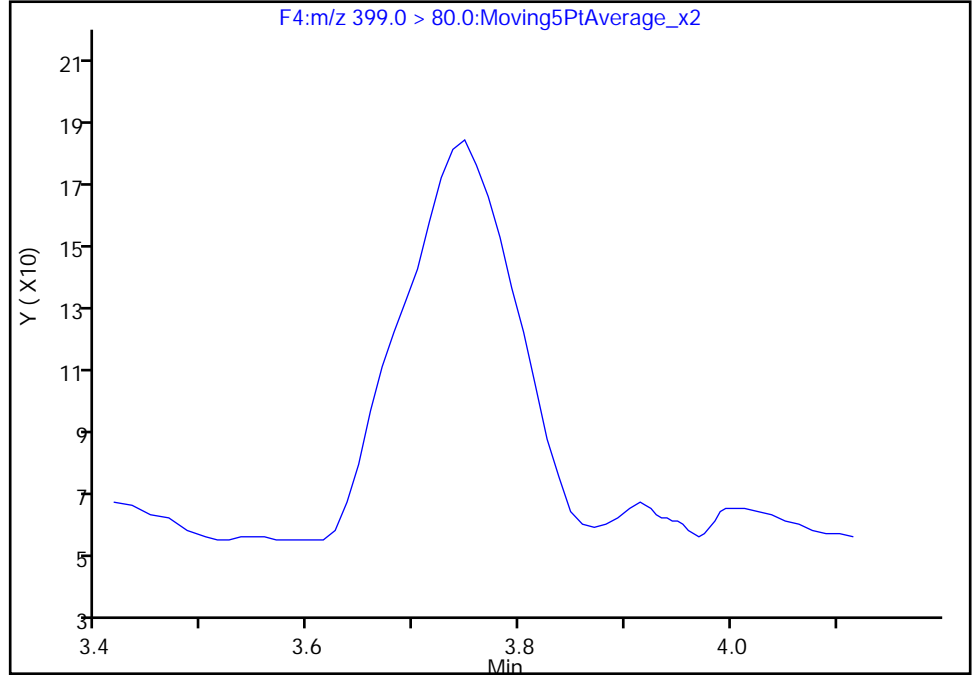
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

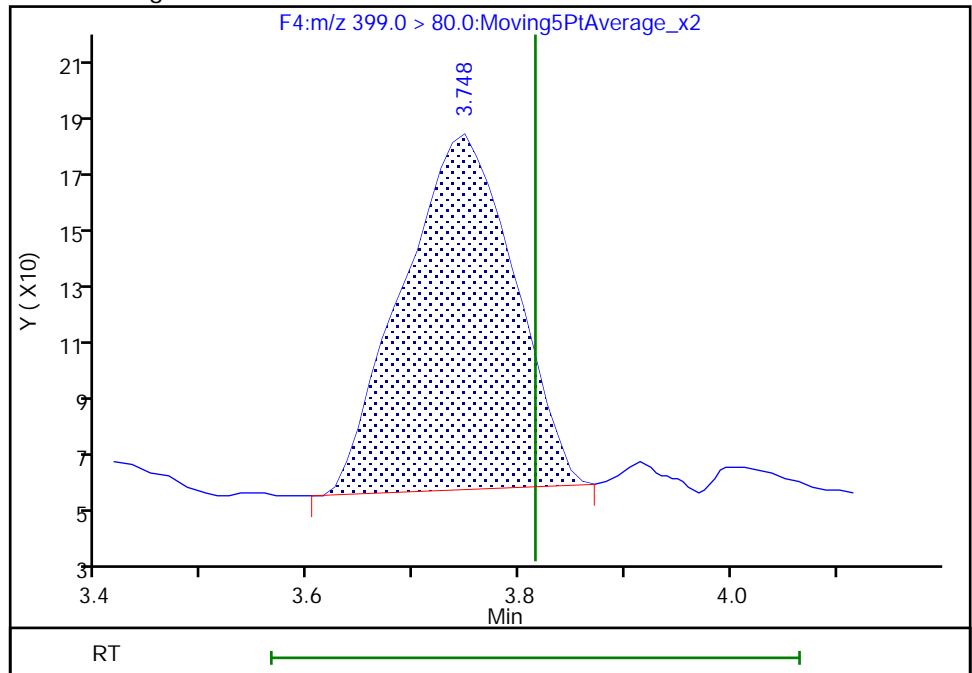
Not Detected
Expected RT: 3.81

Processing Integration Results



Manual Integration Results

RT: 3.75
Area: 915
Amount: -0.127827
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:59
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

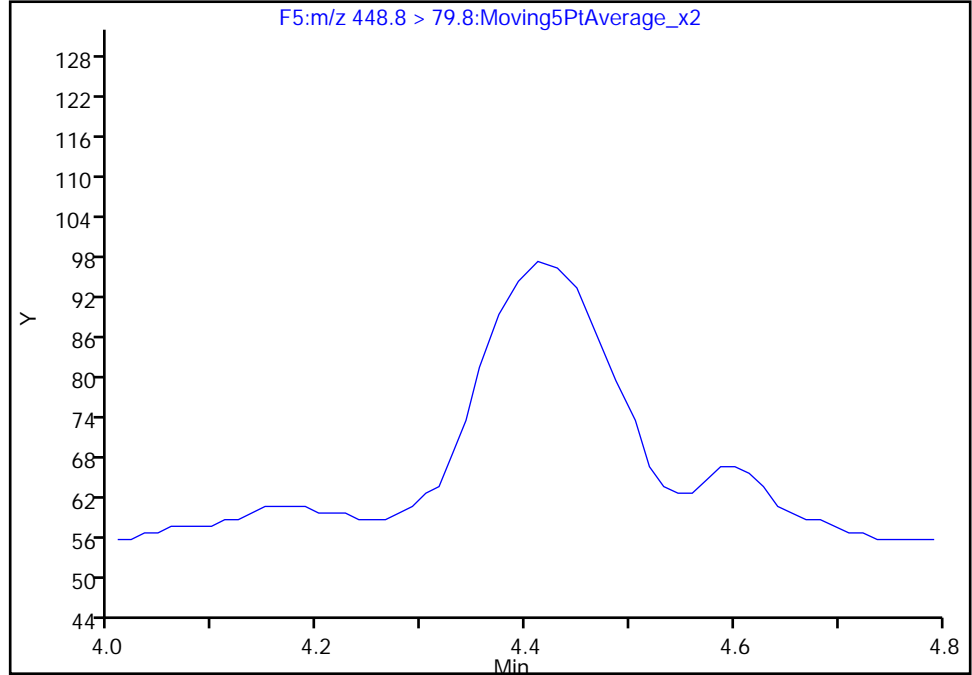
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Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

18 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

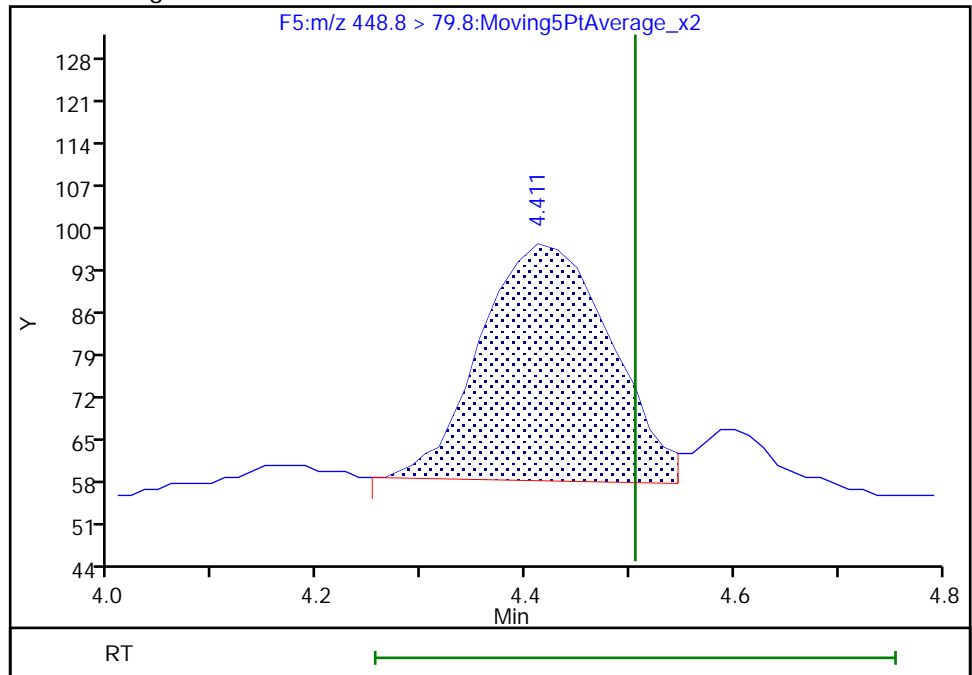
Not Detected
Expected RT: 4.51

Processing Integration Results



Manual Integration Results

RT: 4.41
Area: 342
Amount: 0.076384
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:42
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

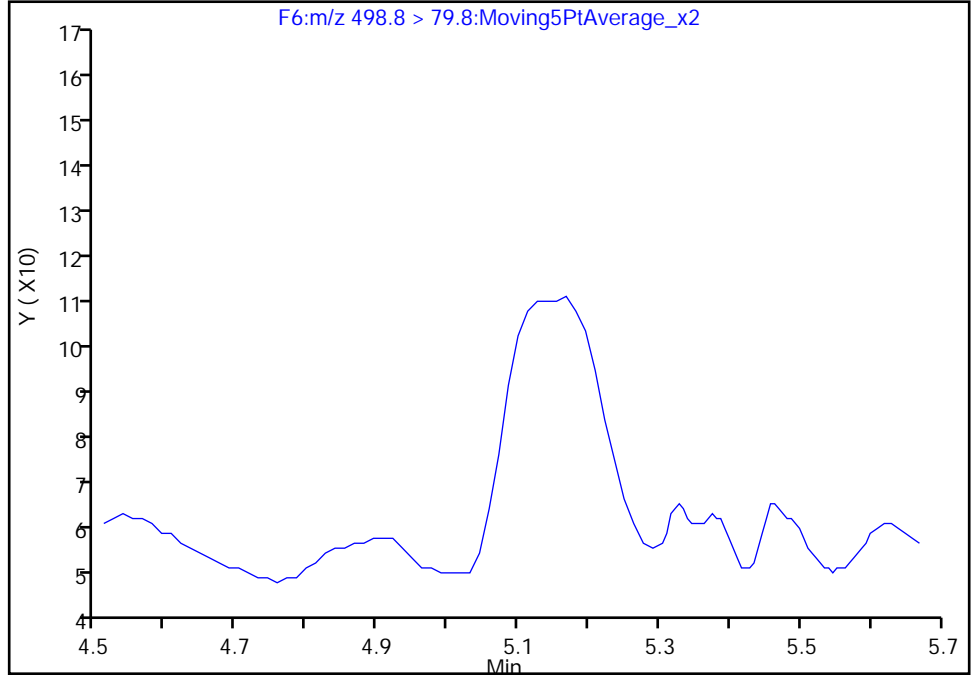
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

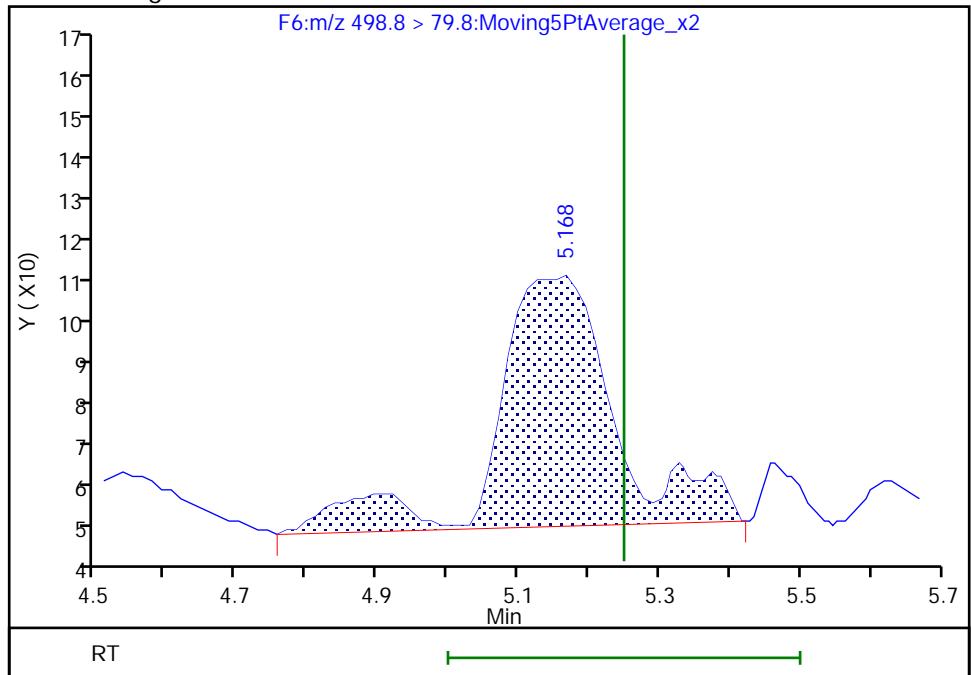
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 5.17
Area: 654
Amount: 0.134907
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:25
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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TestAmerica Burlington

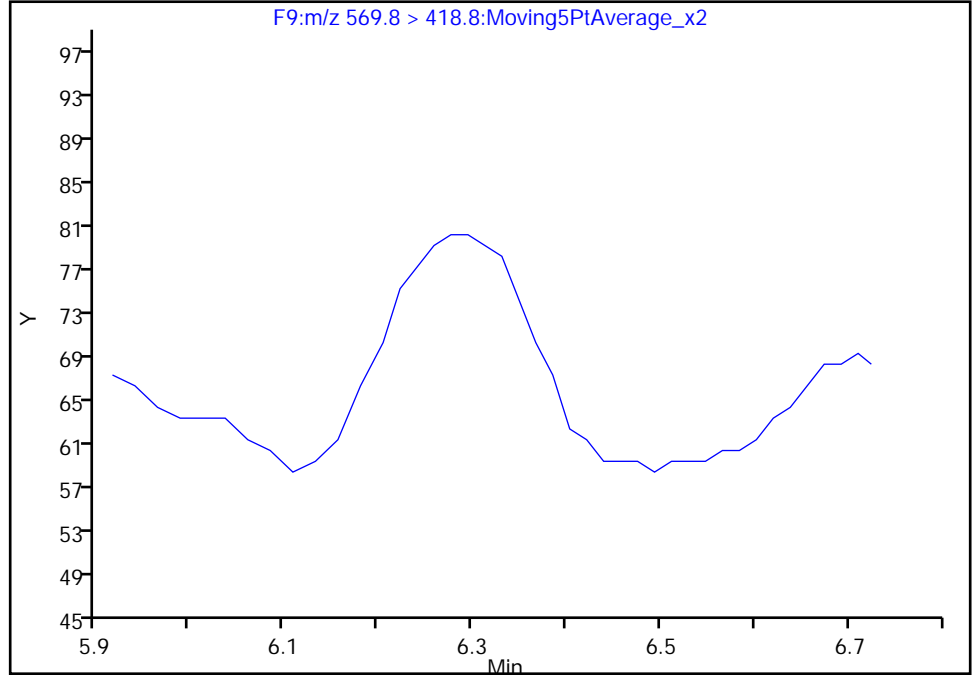
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

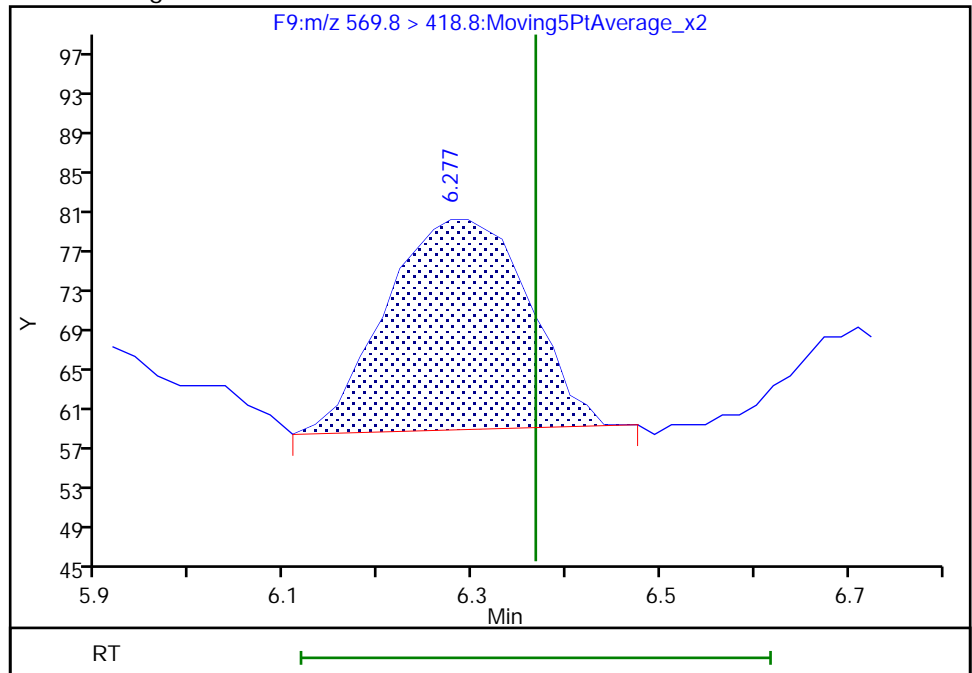
Not Detected
Expected RT: 6.37

Processing Integration Results



Manual Integration Results

RT: 6.28
Area: 225
Amount: 0.071635
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 16:17:11
Audit Action: Manually Integrated

Audit Reason: Missed Peak

TestAmerica Burlington

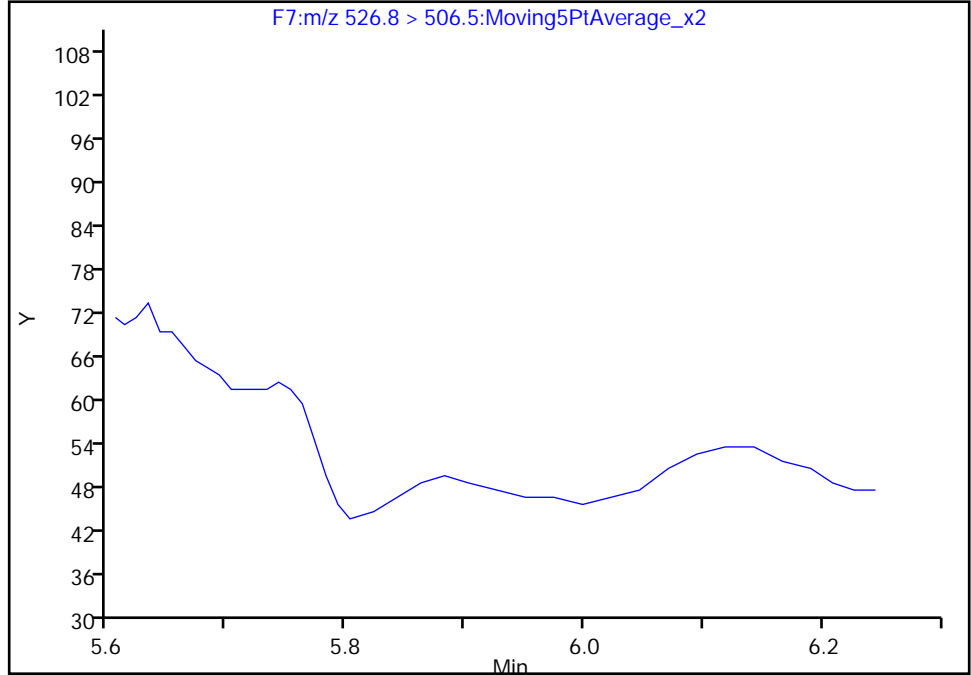
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F7:MRM

23 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

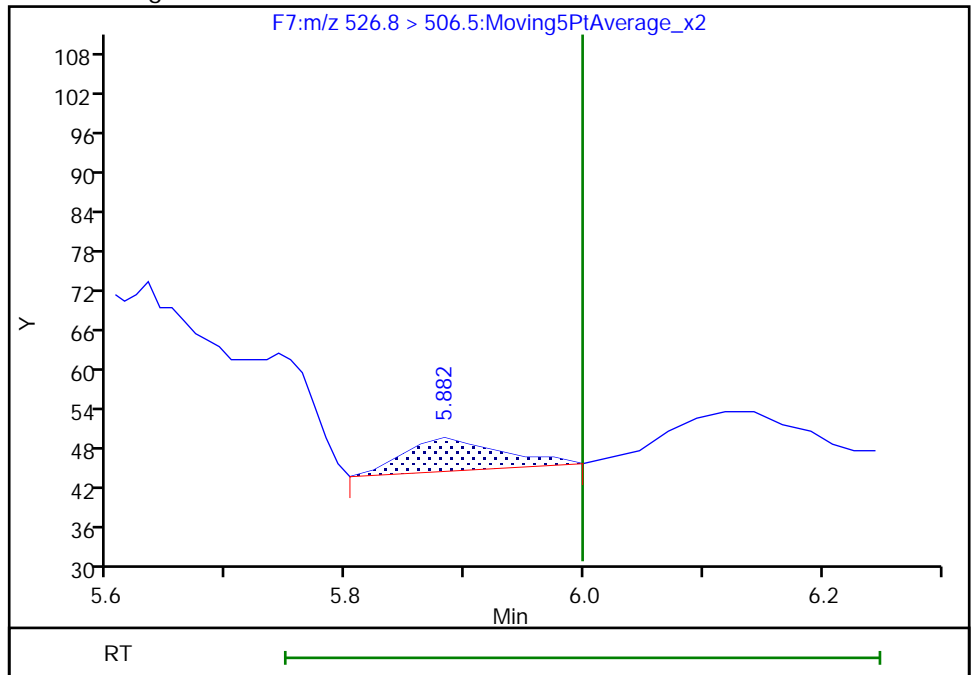
Not Detected
Expected RT: 6.00

Processing Integration Results



Manual Integration Results

RT: 5.88
Area: 28
Amount: 0.009154
Amount Units: ng/ml



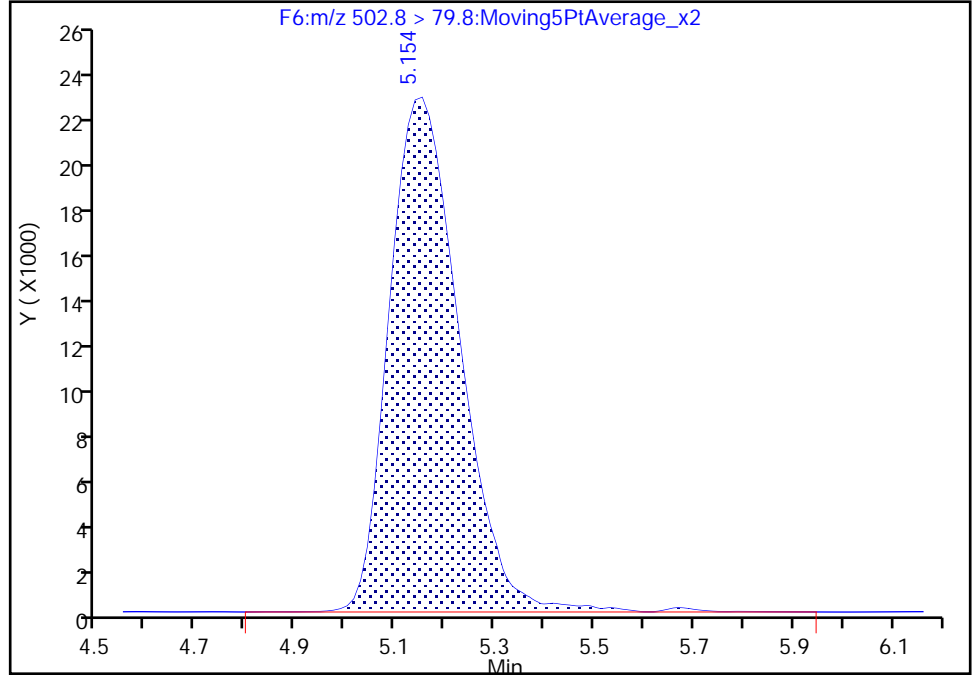
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

D 22 13C4 PFOS, CAS: STL00991
Signal: 1

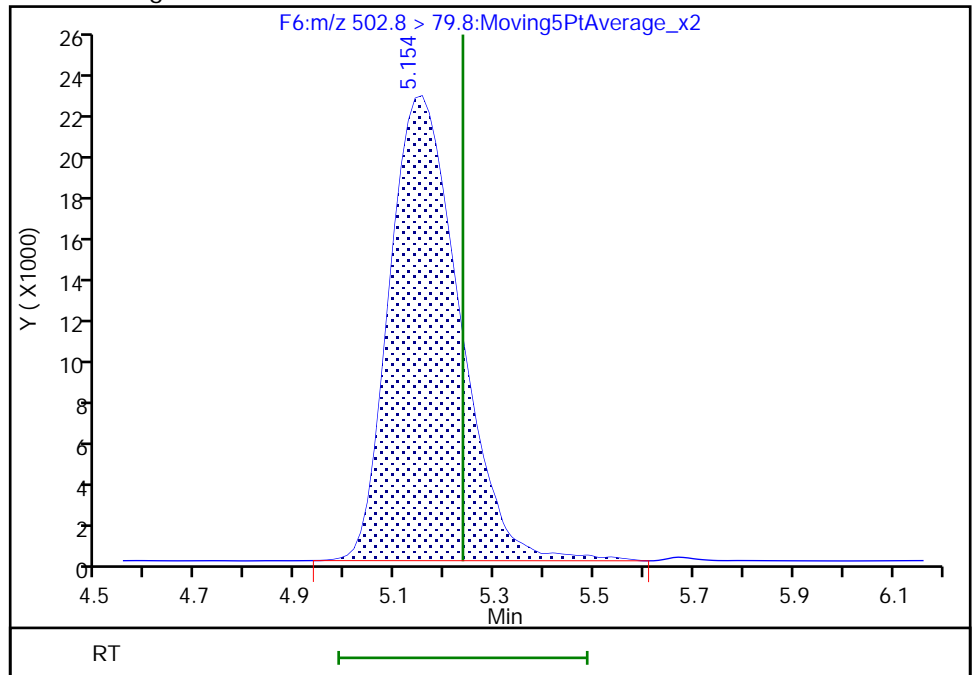
RT: 5.15
Area: 225444
Amount: 48.834833
Amount Units: ng/ml

Processing Integration Results



RT: 5.15
Area: 224171
Amount: 48.559080
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:16:25
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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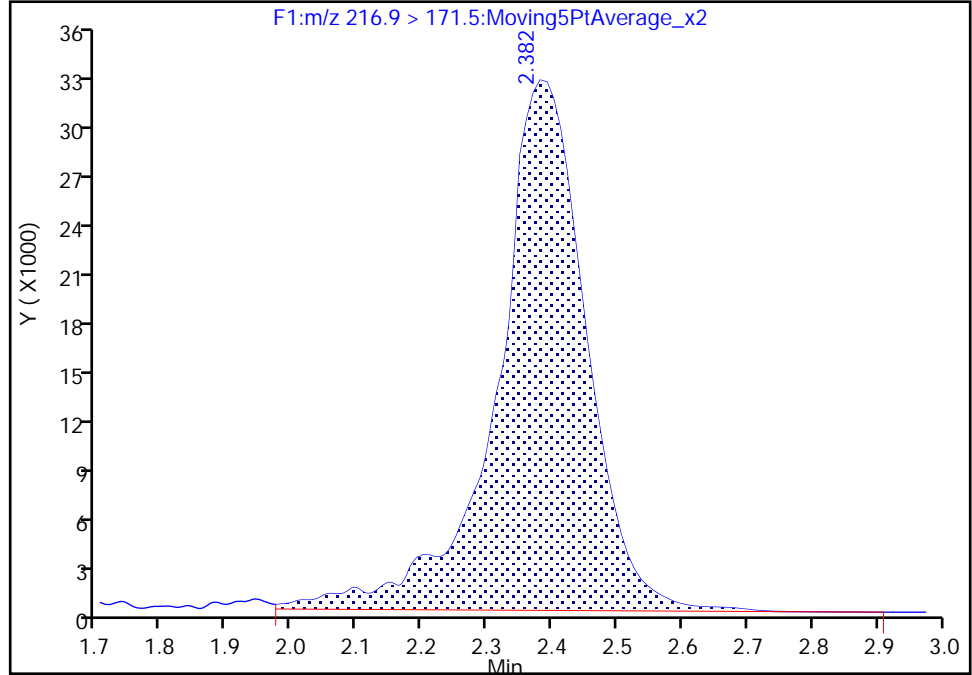
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A57.d
Injection Date: 08-Jan-2019 08:02:54 Instrument ID: LC410
Lims ID: MB 200-138726/1-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 57
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

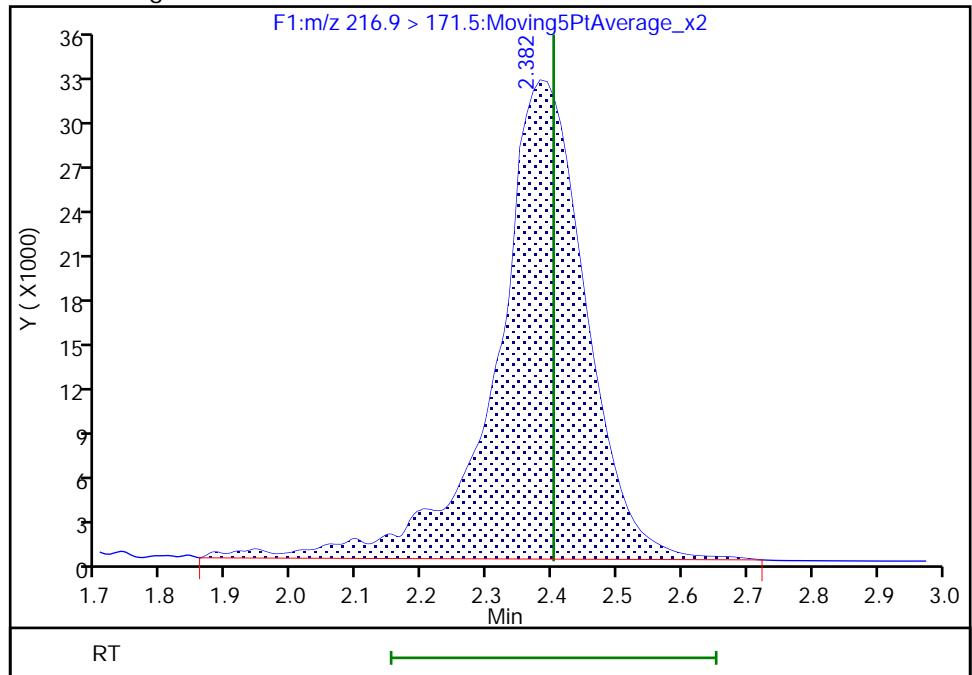
RT: 2.38
Area: 314637
Amount: 36.518909
Amount Units: ng/ml

Processing Integration Results



RT: 2.38
Area: 316198
Amount: 36.700090
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:15:51
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 200-138726/2-A
 Matrix: Water Lab File ID: PF010719A58.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 250 (mL) Date Analyzed: 01/08/2019 08:18
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.5		2.0	0.41
2706-90-3	Perfluoropentanoic acid (PFPeA)	29.2		2.0	0.75
307-24-4	Perfluorohexanoic acid (PFHxA)	37.2		2.0	0.24
375-85-9	Perfluoroheptanoic acid (PFHpA)	44.5		2.0	0.32
335-67-1	Perfluorooctanoic acid (PFOA)	40.9		2.0	0.32
375-95-1	Perfluorononanoic acid (PFNA)	33.5		2.0	0.38
335-76-2	Perfluorodecanoic acid (PFDA)	37.2		2.0	0.38
2058-94-8	Perfluoroundecanoic acid (PFUnA)	41.4		2.0	0.25
307-55-1	Perfluorododecanoic acid (PFDoA)	43.4		2.0	0.35
72629-94-8	Perfluorotridecanoic acid (PFTriA)	47.5		2.0	0.24
376-06-7	Perfluorotetradecanoic acid (PFTeA)	39.1		2.0	0.45
375-73-5	Perfluorobutanesulfonic acid (PFBS)	26.6		2.0	0.44
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	27.1		2.0	0.26
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	34.6		2.0	0.82
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37.9		2.0	0.76
335-77-3	Perfluorodecanesulfonic acid (PFDS)	36.6		2.0	0.53
754-91-6	Perfluorooctanesulfonamide (PFOSA)	41.1		2.0	0.56
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	28.7		20	0.45
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	32.5		20	0.70
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	40.0		20	1.0
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	42.3		20	0.56

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 200-138726/2-A
 Matrix: Water Lab File ID: PF010719A58.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 250 (mL) Date Analyzed: 01/08/2019 08:18
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	105		25-150
STL01892	13C4 PFHpA	78		25-150
STL00990	13C4 PFOA	84		25-150
STL00991	13C4 PFOS	113		25-150
STL00995	13C5 PFNA	86		25-150
STL00992	13C4 PFBA	81		25-150
STL00993	13C2 PFHxA	88		25-150
STL00996	13C2 PFDA	90		25-150
STL00997	13C2 PFUnA	86		25-150
STL00998	13C2 PFDoA	73		25-150
STL01056	13C8 FOSA	89		25-150
STL01893	13C5 PFPeA	117		25-150
STL02116	13C2 PFTeDA	59		25-150
STL02118	d3-NMeFOSAA	71		25-150
STL02117	d5-NEtFOSAA	78		25-150
STL02279	M2-6:2 FTS	145		25-150
STL02280	M2-8:2 FTS	95		25-150
STL02337	13C3 PFBS	119		25-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A58.d
 Lims ID: LCS 200-138726/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 08-Jan-2019 08:18:53 ALS Bottle#: 0 Worklist Smp#: 58
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-058 LCS
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 08-Jan-2019 16:18:48 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0327
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 16:15:25
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	216.9 > 171.5	2.382	2.402	-0.020	1.000	300845	40.5	81.1	107	
2 Perfluorobutanoic acid	212.9 > 168.9	2.382	2.402	-0.020	1.000	106693	20.7	104	207	
D 3 13C5 PFPeA	267.7 > 222.6	2.791	2.818	-0.027	1.000	275686	58.6	117	1034	
4 Perfluoropentanoic acid	262.9 > 218.8	2.791	2.818	-0.027	1.000	229182	14.6	73.0	410	
D 6 13C3 PFBS	302.0 > 79.8	2.867	2.900	-0.033	1.000	215731	55.5	119	922	
5 Perfluorobutanesulfonic acid	298.9 > 80.0	2.867	2.900	-0.033	1.000	107823	13.3	75.3	243	
D 7 13C2 PFHxA	314.8 > 269.6	3.201	3.250	-0.049	1.000	372260	43.9	87.8	1355	
8 Perfluorohexanoic acid	312.8 > 268.6	3.201	3.250	-0.049	1.000	143739	18.6	93.0	1874	
D 9 13C4 PFHpA	366.9 > 321.8	3.715	3.782	-0.067	1.000	605796	39.0	78.0	1069	
10 Perfluoroheptanoic acid	362.9 > 318.8	3.715	3.782	-0.067	1.000	263688	22.3	111	746	
12 Perfluorohexanesulfonic acid	399.0 > 80.0	3.759	3.815	-0.056	1.000	98555	13.6	74.5	359	
D 11 18O2 PFHxS	402.9 > 83.8	3.759	3.826	-0.067	1.000	222070	49.4	105	434	
D 13 M2-6:2 FTS	428.6 > 408.6	4.330	4.411	-0.081	1.000	95627	69.0	145	557	
14 1H,1H,2H,2H-perfluorooctanesulfoni	426.6 > 406.6	4.330	4.411	-0.081	1.000	20695	20.0	106	1070	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										
412.9 > 368.8	4.374	4.449	-0.075	1.000	201927	20.4		102	1281	
D 17 13C4 PFOA										
416.9 > 371.8	4.374	4.468	-0.094	1.000	499308	42.1		84.2	1043	
* 15 13C2 PFOA										
414.9 > 369.8	4.355	4.468	-0.113		631678	50.0			3127	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.393	4.505	-0.112	0.855	74184	17.3		91.0	403	
D 20 13C5 PFNA										
467.8 > 422.8	5.127	5.222	-0.095	1.000	688792	43.1		86.2	1114	
19 Perfluorononanoic acid										
462.8 > 418.8	5.127	5.222	-0.095	1.000	253300	16.7		83.6	554	
D 22 13C4 PFOS										
502.8 > 79.8	5.140	5.236	-0.096	1.000	214475	53.9		113	337	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.154	5.250	-0.096	1.003	87798	18.9		102	304	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.882	5.998	-0.116	1.000	169991	45.3		94.5	1413	
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.882	5.998	-0.116	1.000	60495	21.1		110	261	
D 26 13C2 PFDA										
514.9 > 469.5	5.902	6.022	-0.120	1.000	743750	45.1		90.2	2521	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.902	6.022	-0.120	1.000	279530	18.6		93.1	1118	
28 N-methylperfluorooctanesulfonamido										M
569.8 > 418.8	6.259	6.367	-0.108	1.000	46548	14.3		71.7	92.4	M
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.259	6.367	-0.108	1.000	149466	35.5		71.0	524	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.634	6.734	-0.100	1.000	139464	39.0		78.1	688	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.634	6.762	-0.128	1.000	43664	16.3		81.3	56.4	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.652	6.762	-0.110	1.294	85864	18.3		94.9	876	
D 32 13C2 PFUnA										
564.8 > 519.8	6.670	6.777	-0.107	1.000	738255	43.0		86.1	2615	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.670	6.777	-0.107	1.000	313685	20.7		104	1055	
D 35 13C8 FOSA										
505.8 > 77.8	6.917	6.945	-0.028	1.000	341195	44.5		89.1	1982	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.917	6.959	-0.042	1.000	118731	20.6		103	851	
D 37 13C2 PFDaA										
614.8 > 569.6	7.339	7.474	-0.135	1.000	794285	36.6		73.2	2510	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.362	7.474	-0.112	1.003	296046	21.7		109	2231	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.970	8.097	-0.127	0.936	270677	23.7		119	2169	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.530	8.666	-0.136	1.002	221994	19.5	Target=1.00	97.6	871	
712.8 > 168.8	8.530	8.666	-0.136	1.002	45599		4.87(0.90-1.10)		194	
712.8 > 218.8	8.530	8.666	-0.136	1.002	26679		8.32(0.90-1.10)		305	
D 40 13C2 PFTeDA										
714.8 > 669.6	8.514	8.681	-0.167	1.000	583147	29.3		58.6	889	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A58.d

Injection Date: 08-Jan-2019 08:18:53

Instrument ID: LC410

Lims ID: LCS 200-138726/2-A

Client ID:

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 58

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

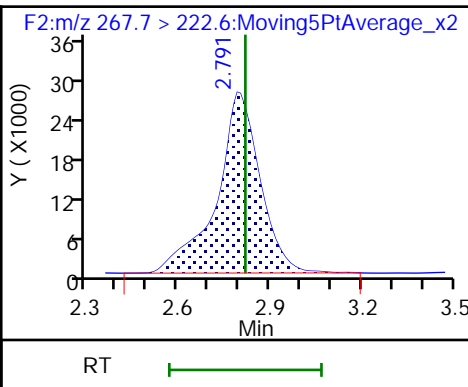
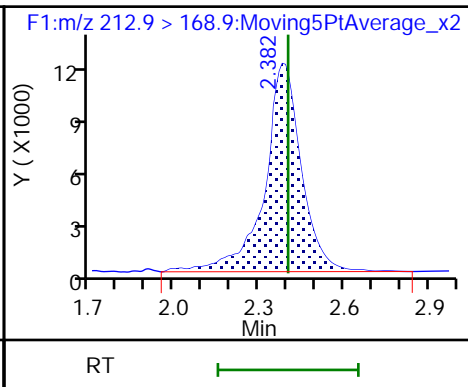
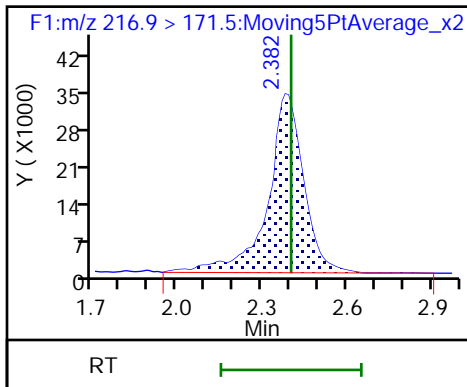
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

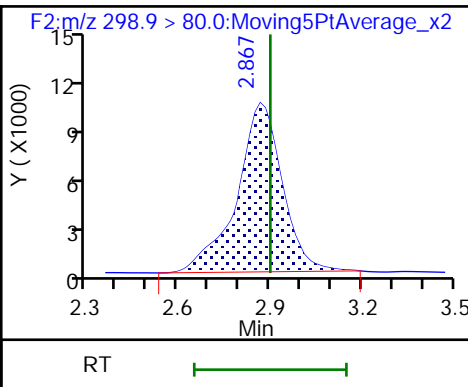
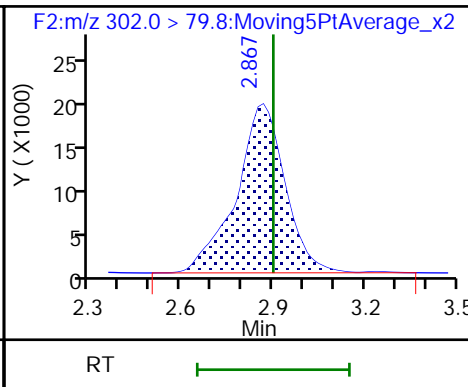
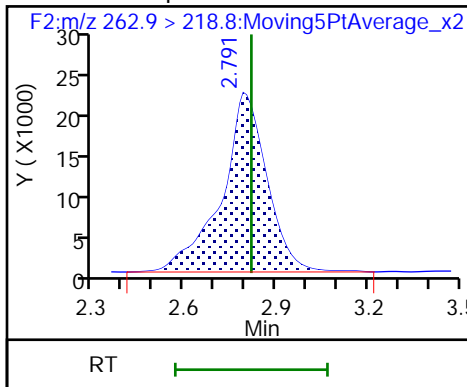
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 6 13C3 PFBS

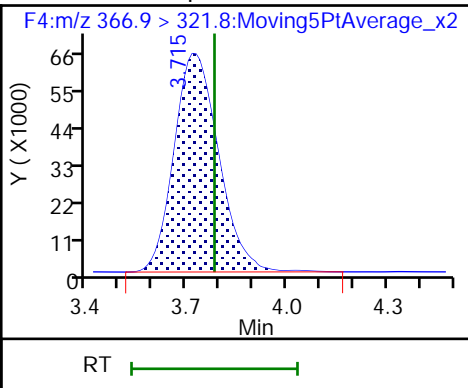
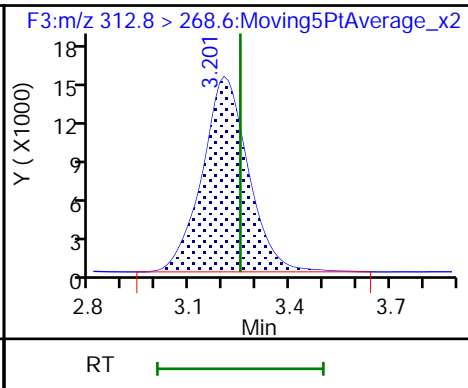
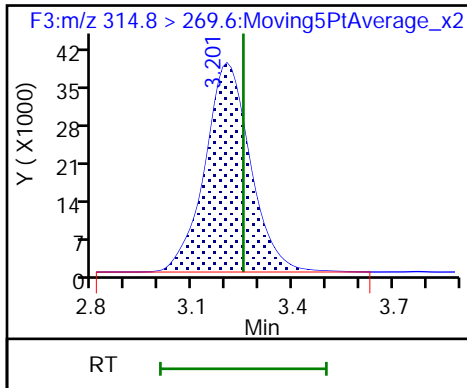
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

8 Perfluorohexanoic acid

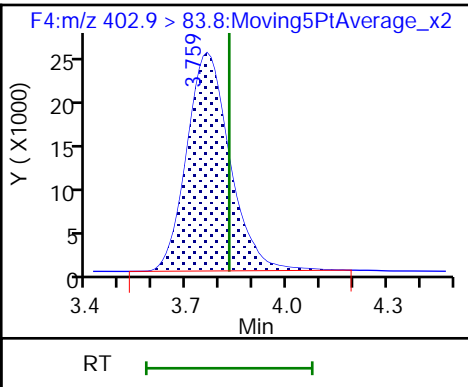
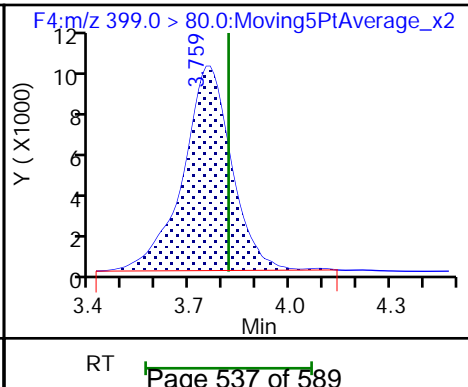
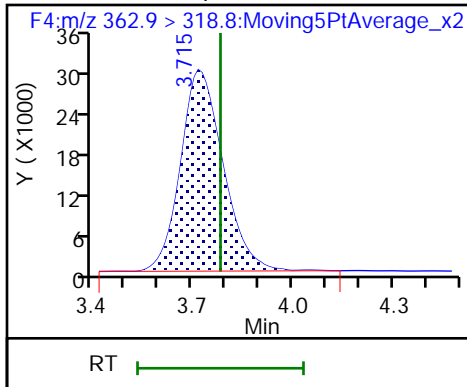
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

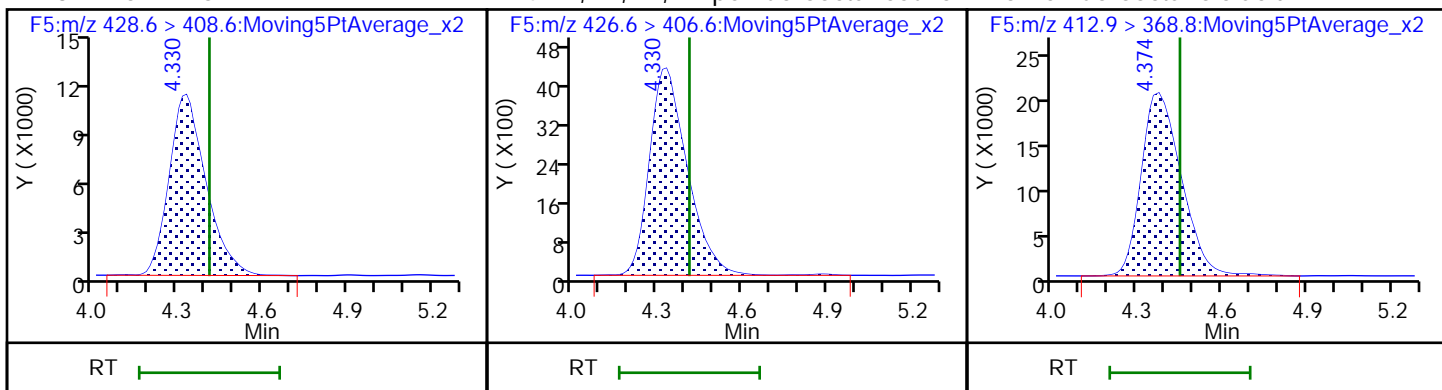
12 Perfluorohexanesulfonic acid

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

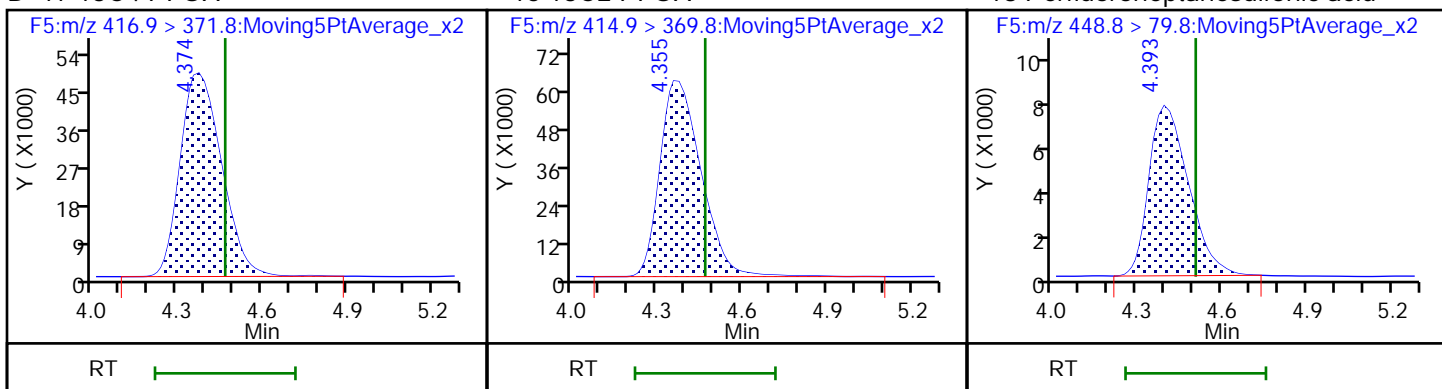
14 1H,1H,2H,2H-perfluorooctanesulfonyl 16 Perfluorooctanoic acid



D 17 13C4 PFOA

* 15 13C2 PFOA

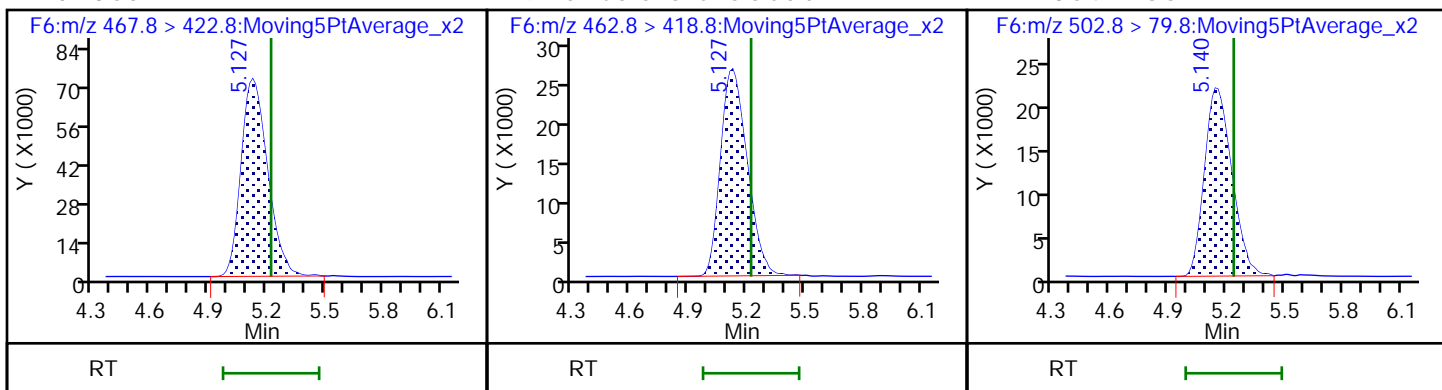
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

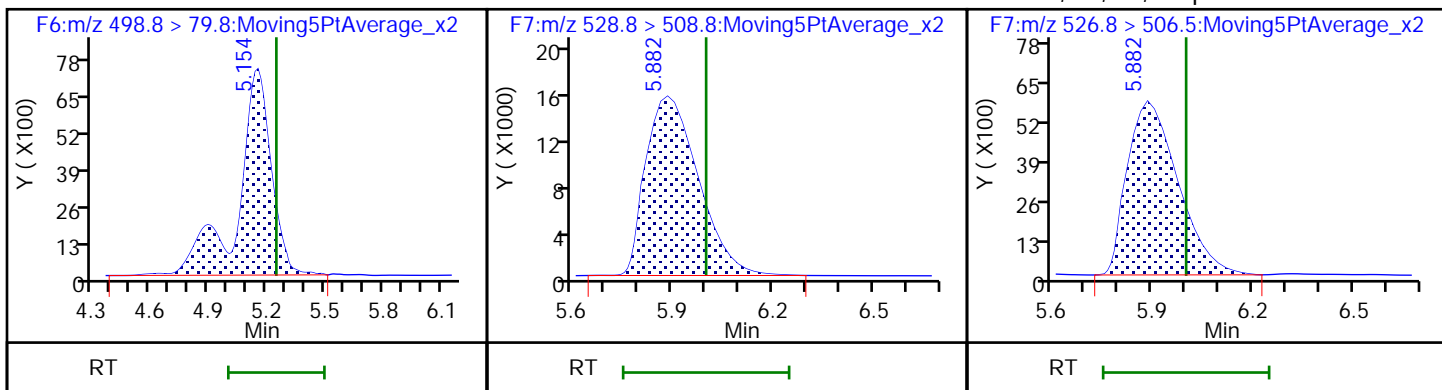
D 22 13C4 PFOS



21 Perfluorooctanesulfonic acid

D 24 M2-8:2 FTS

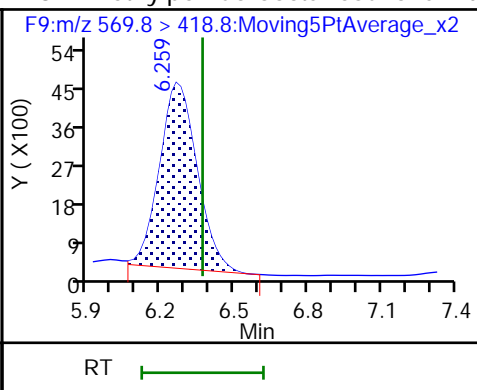
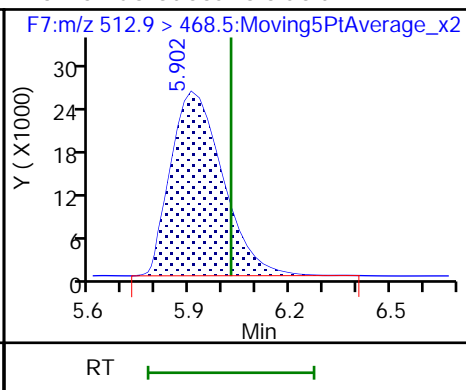
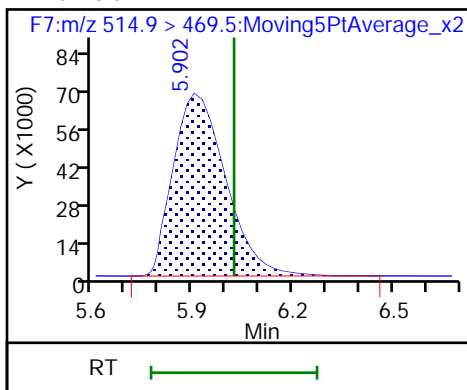
23 1H,1H,2H,2H-perfluorodecanesulfonyl



D 26 13C2 PFDA

25 Perfluorodecanoic acid

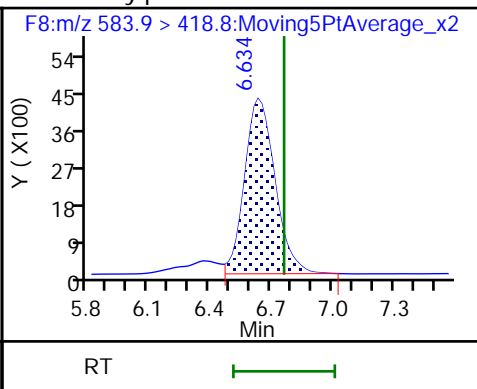
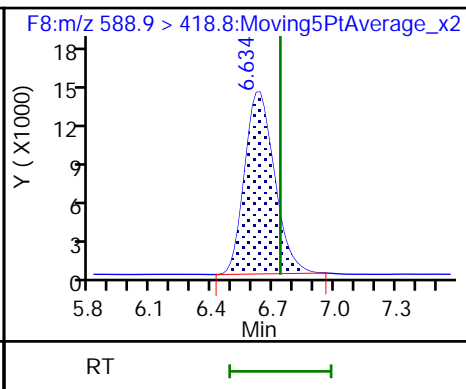
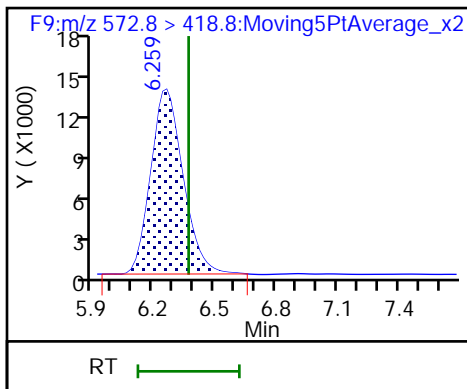
28 N-methylperfluorooctanesulfonamido (M)



D 27 d3-NMeFOSAA

D 29 d5-NEtFOSAA

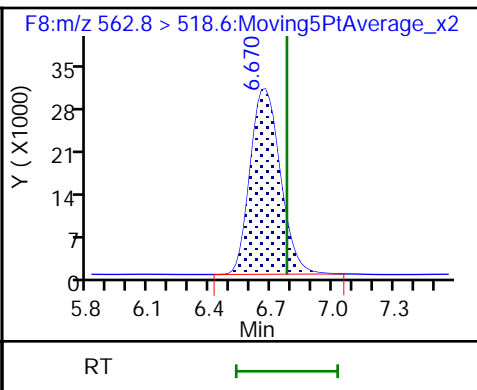
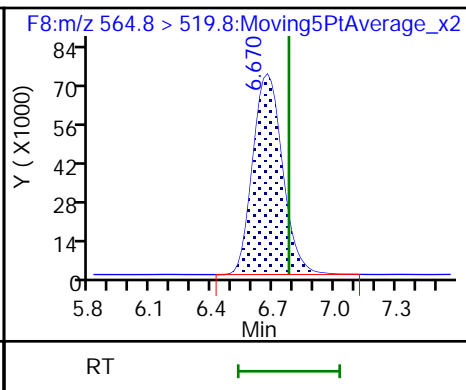
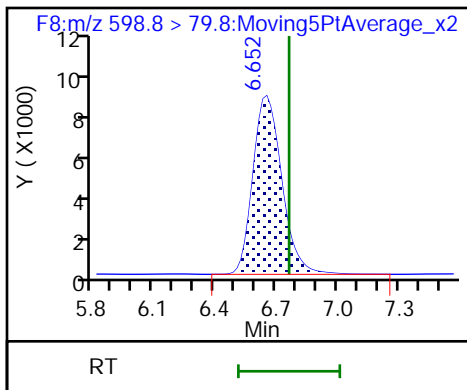
30 N-ethylperfluorooctanesulfonamidoa



31 Perfluorodecanesulfonic acid

D 32 13C2 PFUnA

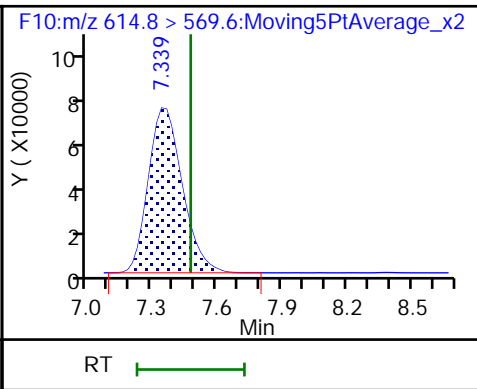
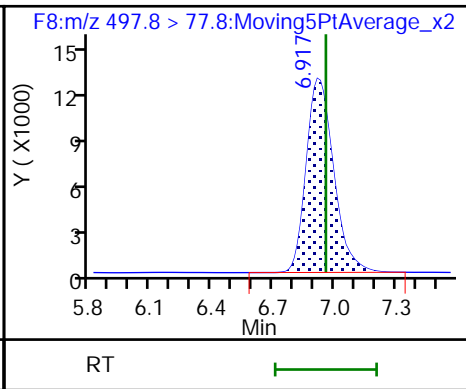
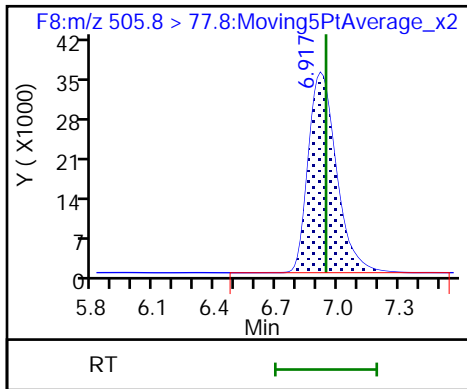
33 Perfluoroundecanoic acid



D 35 13C8 FOSA

34 Perfluorooctanesulfonamide

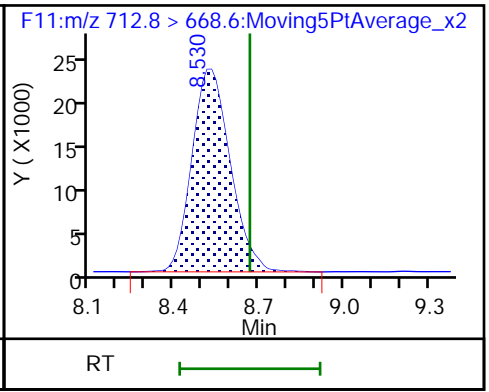
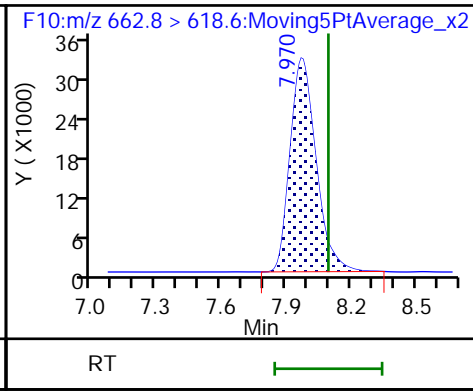
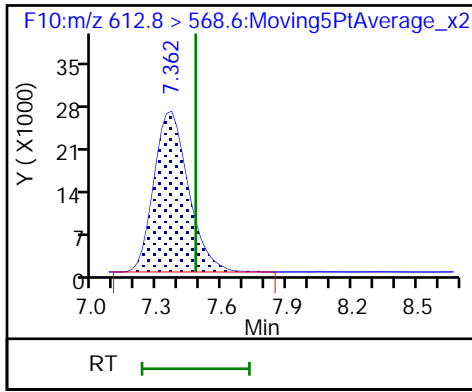
D 37 13C2 PFDoA



36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

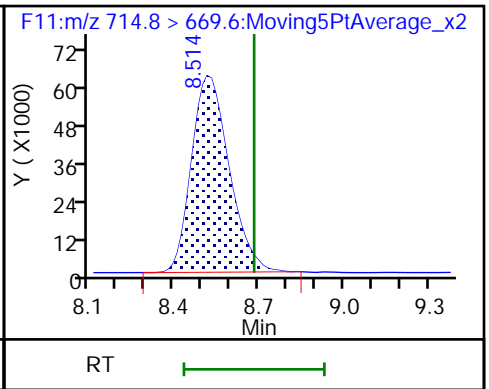
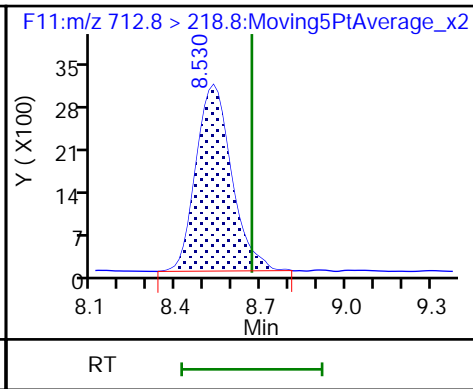
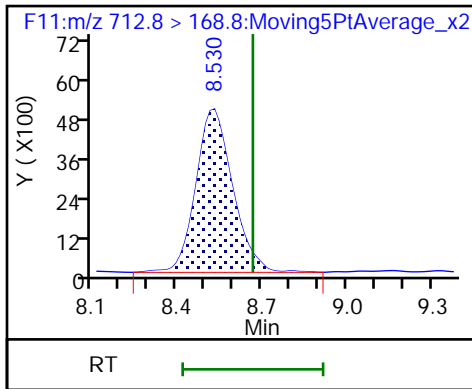
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

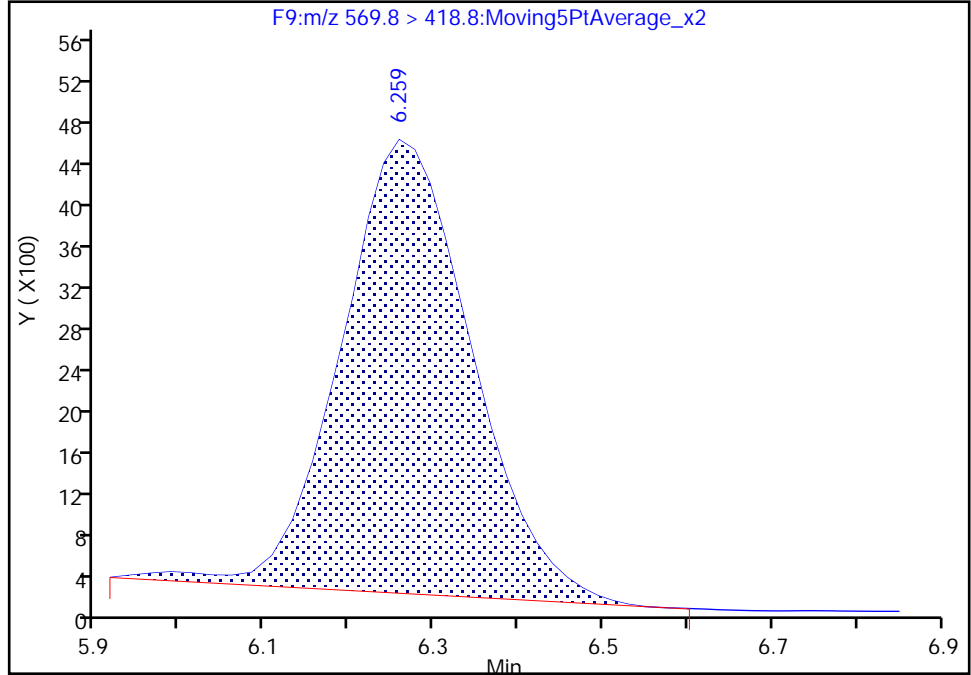
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Injection Date: 08-Jan-2019 08:18:53 Instrument ID: LC410
Lims ID: LCS 200-138726/2-A
Client ID:
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 58
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F9:MRM

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

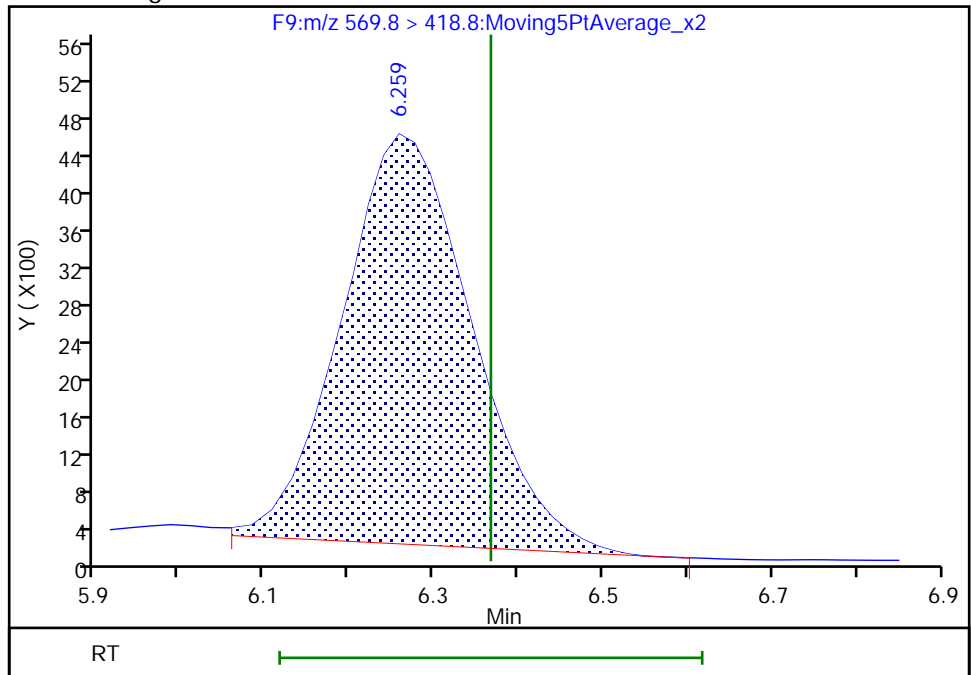
RT: 6.26
Area: 47126
Amount: 14.517699
Amount Units: ng/ml

Processing Integration Results



RT: 6.26
Area: 46548
Amount: 14.339640
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 16:15:13
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 541 of 589

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 MS Lab Sample ID: 480-147040-3 MS
 Matrix: Water Lab File ID: PF010719A71.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 12:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 271.8 (mL) Date Analyzed: 01/08/2019 11:45
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.5		1.8	0.38
2706-90-3	Perfluoropentanoic acid (PFPeA)	43.5		1.8	0.69
307-24-4	Perfluorohexanoic acid (PFHxA)	41.9		1.8	0.22
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.5		1.8	0.29
335-67-1	Perfluorooctanoic acid (PFOA)	38.4		1.8	0.29
375-95-1	Perfluorononanoic acid (PFNA)	30.3		1.8	0.35
335-76-2	Perfluorodecanoic acid (PFDA)	33.5		1.8	0.35
2058-94-8	Perfluoroundecanoic acid (PFUnA)	35.8		1.8	0.23
307-55-1	Perfluorododecanoic acid (PFDoA)	36.5		1.8	0.32
72629-94-8	Perfluorotridecanoic acid (PFTriA)	35.9		1.8	0.22
376-06-7	Perfluorotetradecanoic acid (PFTeA)	30.7		1.8	0.41
375-73-5	Perfluorobutanesulfonic acid (PFBS)	30.4		1.8	0.40
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	27.5		1.8	0.24
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	33.6		1.8	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37.8		1.8	0.70
335-77-3	Perfluorodecanesulfonic acid (PFDS)	35.1		1.8	0.49
754-91-6	Perfluorooctanesulfonamide (PFOSA)	34.2		1.8	0.52
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	23.4		18	0.41
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	26.9		18	0.64
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.3		18	0.92
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	33.6		18	0.52

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 MS Lab Sample ID: 480-147040-3 MS
 Matrix: Water Lab File ID: PF010719A71.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 12:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 271.8 (mL) Date Analyzed: 01/08/2019 11:45
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	82		50-150
STL01892	13C4 PFHpA	62		50-150
STL00990	13C4 PFOA	79		50-150
STL00991	13C4 PFOS	94		50-150
STL00995	13C5 PFNA	85		50-150
STL00992	13C4 PFBA	58		25-150
STL00993	13C2 PFHxA	44	*	50-150
STL00996	13C2 PFDA	91		50-150
STL00997	13C2 PFUnA	91		50-150
STL00998	13C2 PFDoA	85		50-150
STL01056	13C8 FOSA	60		25-150
STL01893	13C5 PFPeA	50		25-150
STL02116	13C2 PFTeDA	79		50-150
STL02118	d3-NMeFOSAA	71		50-150
STL02117	d5-NEtFOSAA	81		50-150
STL02279	M2-6:2 FTS	204	*	25-150
STL02280	M2-8:2 FTS	125		25-150
STL02337	13C3 PFBS	71		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A71.d
 Lims ID: 480-147040-A-3-B MS
 Client ID: MW-09-121918
 Sample Type: MS
 Inject. Date: 08-Jan-2019 11:45:36 ALS Bottle#: 0 Worklist Smp#: 71
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-071 3MS
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:35:28 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 17:43:33
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.347	2.402	-0.055	1.000	200423	28.9		57.8	98.5	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.351	2.402	-0.051	1.002	77345	22.6		113	2.4	M
D 3 13C5 PFPeA										M
267.7 > 222.6	2.770	2.818	-0.048	1.000	109093	24.8		49.6	82.5	M
4 Perfluoropentanoic acid										M
262.9 > 218.8	2.760	2.818	-0.058	0.996	147024	23.7		118	31.3	M
D 6 13C3 PFBS										
302.0 > 79.8	2.834	2.900	-0.066	1.000	119919	33.0		71.0	236	
5 Perfluorobutanesulfonic acid										M
298.9 > 80.0	2.834	2.900	-0.066	1.000	74371	16.5		93.5	12.3	M
D 7 13C2 PFHxA										M
314.8 > 269.6	3.164	3.250	-0.086	1.000	174407	22.0		44.0	417	M
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.164	3.250	-0.086	1.000	82436	22.8		114	48.2	M
D 9 13C4 PFHpA										
366.9 > 321.8	3.670	3.782	-0.112	1.000	451229	31.1		62.2	760	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.670	3.782	-0.112	1.000	198793	22.5		113	328	
12 Perfluorohexanesulfonic acid										M
399.0 > 80.0	3.703	3.815	-0.112	1.000	79773	15.0		82.3	84.0	M
D 11 18O2 PFHxS										
402.9 > 83.8	3.703	3.826	-0.123	1.000	163062	38.8		82.1	410	
D 13 M2-6:2 FTS										
428.6 > 408.6	4.265	4.411	-0.146	1.000	125518	96.9		204	927	
14 1H,1H,2H,2H-perfluorooctanesulfoni										
426.6 > 406.6	4.265	4.411	-0.146	1.000	52722	20.3		107	739	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										M
412.9 > 368.8	4.317	4.449	-0.132	1.003	180279	20.9		104	154	M
D 17 13C4 PFOA										
416.9 > 371.8	4.304	4.468	-0.164	1.000	436428	39.4		78.8	733	
* 15 13C2 PFOA										M
414.9 > 369.8	4.317	4.468	-0.151		590524	50.0			681	M
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.342	4.505	-0.163	0.852	60660	18.3		95.9	187	
D 20 13C5 PFNA										
467.8 > 422.8	5.072	5.222	-0.150	1.000	635158	42.5		85.0	1093	
19 Perfluorononanoic acid										
462.8 > 418.8	5.072	5.222	-0.150	1.000	229656	16.4		82.2	394	
D 22 13C4 PFOS										
502.8 > 79.8	5.099	5.236	-0.137	1.000	166396	44.8		93.6	545	
21 Perfluorooctanesulfonic acid										M
498.8 > 79.8	5.099	5.250	-0.151	1.000	74018	20.6		111	278	M
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.803	5.998	-0.195	0.997	64800	18.2		95.2	2204	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.823	5.998	-0.175	1.000	210939	60.1		125	945	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.843	6.022	-0.179	1.000	258267	18.2		91.1	2557	
D 26 13C2 PFDA										
514.9 > 469.5	5.843	6.022	-0.179	1.000	702239	45.6		91.1	4571	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.205	6.367	-0.162	1.000	38808	12.7		63.5	70.5	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.205	6.367	-0.162	1.000	140608	35.7		71.4	524	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.562	6.734	-0.172	1.000	134983	40.4		80.8	607	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.580	6.762	-0.182	1.290	69579	19.1		99.1	1190	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.562	6.762	-0.200	1.000	37953	14.6		73.0	56.2	
D 32 13C2 PFUnA										
564.8 > 519.8	6.598	6.777	-0.179	1.000	730209	45.5		91.1	2373	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.598	6.777	-0.179	1.000	291706	19.5		97.3	825	
D 35 13C8 FOSA										
505.8 > 77.8	6.931	6.945	-0.014	1.000	215347	30.1		60.1	1041	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.931	6.959	-0.028	1.000	67837	18.6		93.1	389	
D 37 13C2 PFDoA										
614.8 > 569.6	7.294	7.474	-0.180	1.000	866889	42.7		85.4	2582	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.317	7.474	-0.157	1.003	295169	19.8		99.2	2235	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.945	8.097	-0.152	0.935	281066	19.5		97.5	1704	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.499	8.666	-0.167	1.000	239637	16.7	Target=1.00	83.3	920	
712.8 > 168.8	8.499	8.666	-0.167	1.000	47939		5.00(0.90-1.10)		294	
712.8 > 218.8	8.514	8.666	-0.152	1.002	24724		9.69(0.90-1.10)		124	
D 40 13C2 PFTeDA										
714.8 > 669.6	8.499	8.681	-0.182	1.000	737386	39.6		79.2	2096	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A71.d

Injection Date: 08-Jan-2019 11:45:36

Instrument ID: LC410

Lims ID: 480-147040-A-3-B MS

Client ID: MW-09-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 71

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

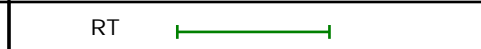
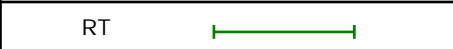
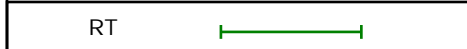
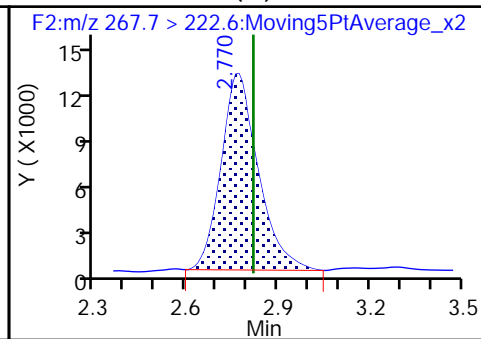
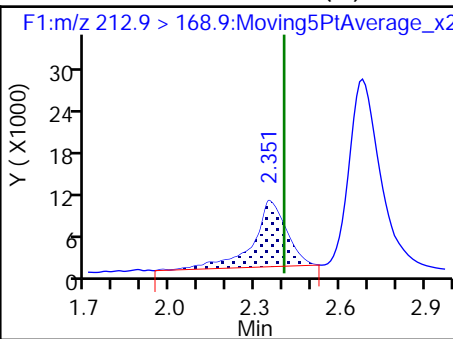
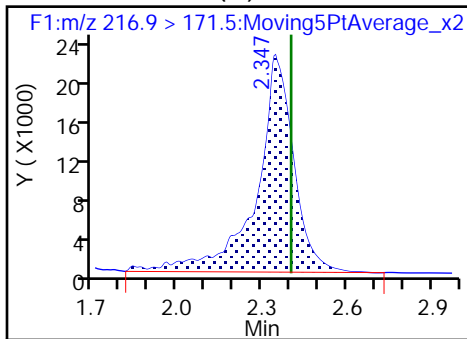
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

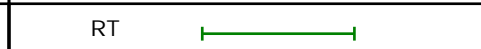
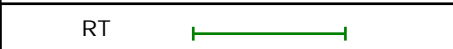
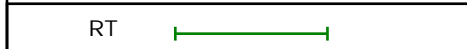
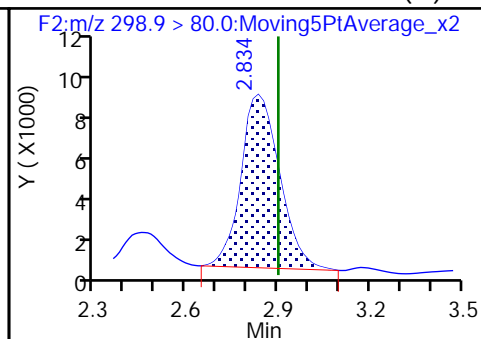
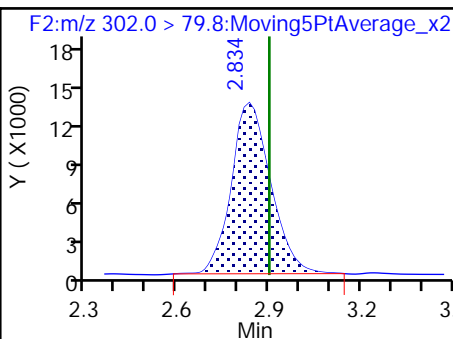
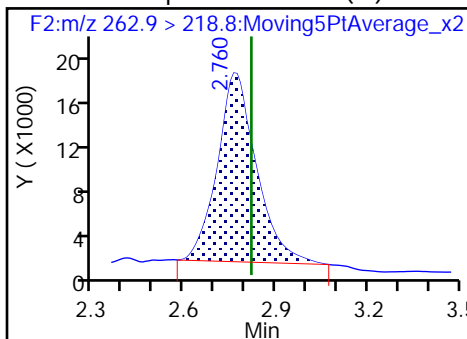
D 3 13C5 PFPeA (M)



4 Perfluoropentanoic acid (M)

D 6 13C3 PFBS

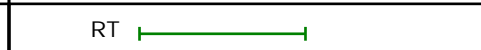
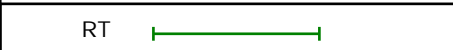
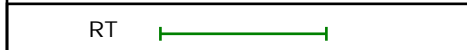
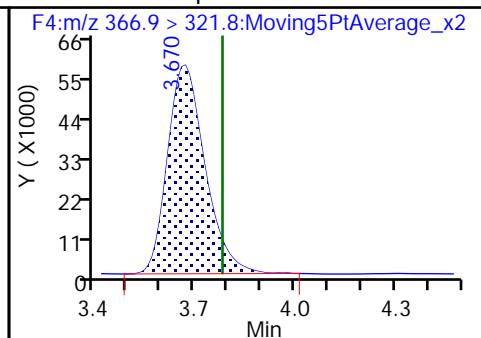
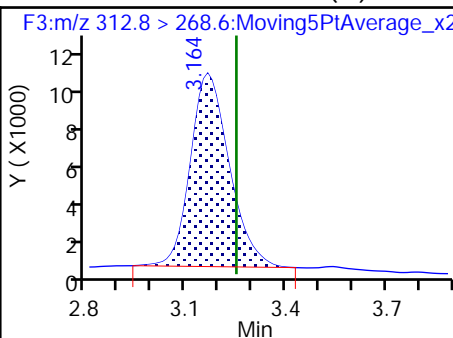
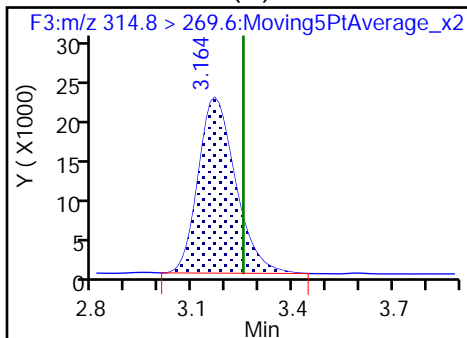
5 Perfluorobutanesulfonic acid (M)



D 7 13C2 PFHxA (M)

8 Perfluorohexanoic acid (M)

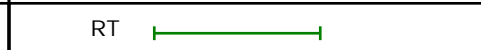
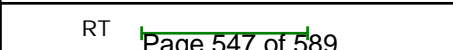
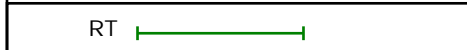
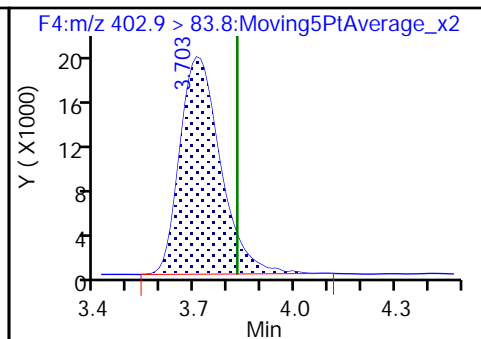
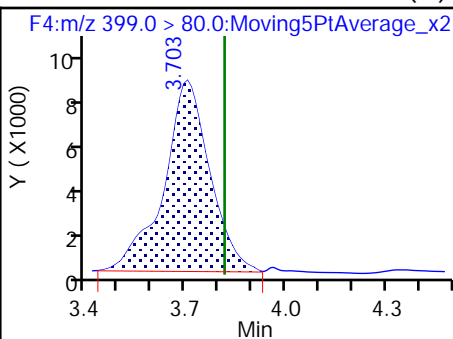
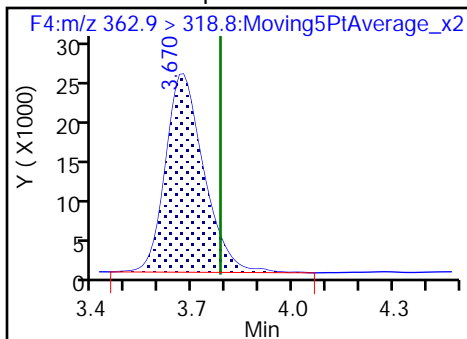
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

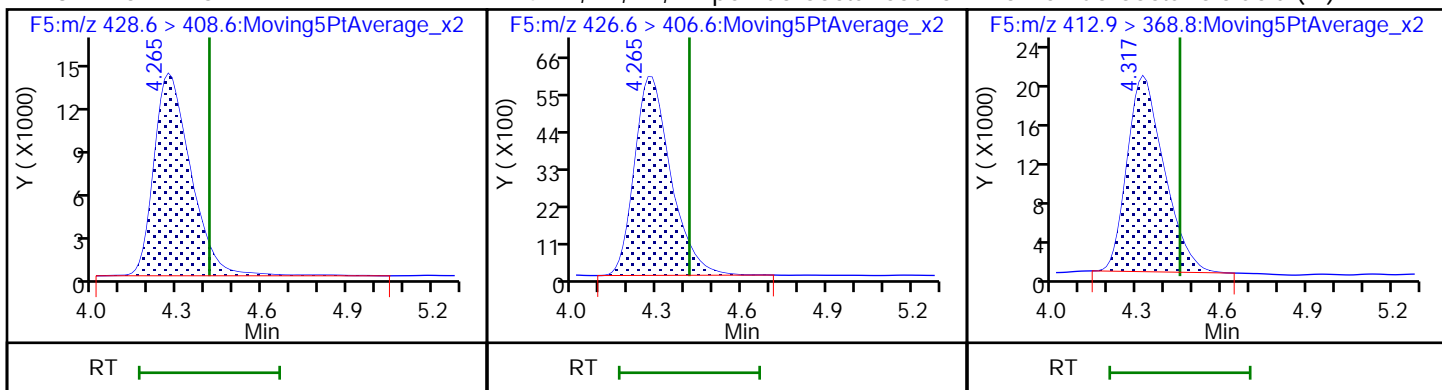
12 Perfluorohexanesulfonic acid (M)

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

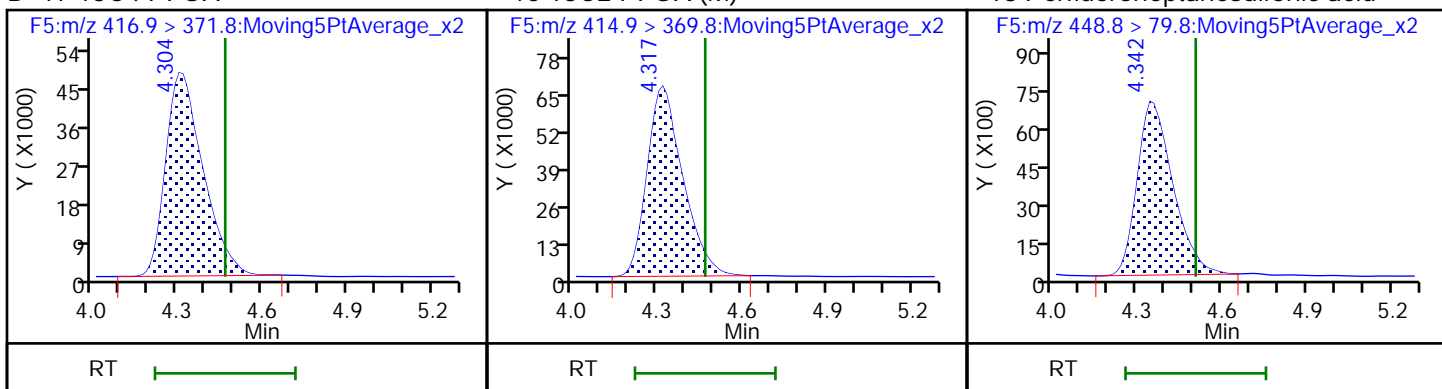
14 1H,1H,2H,2H-perfluorooctanesulfonyl 16 Perfluorooctanoic acid (M)



D 17 13C4 PFOA

* 15 13C2 PFOA (M)

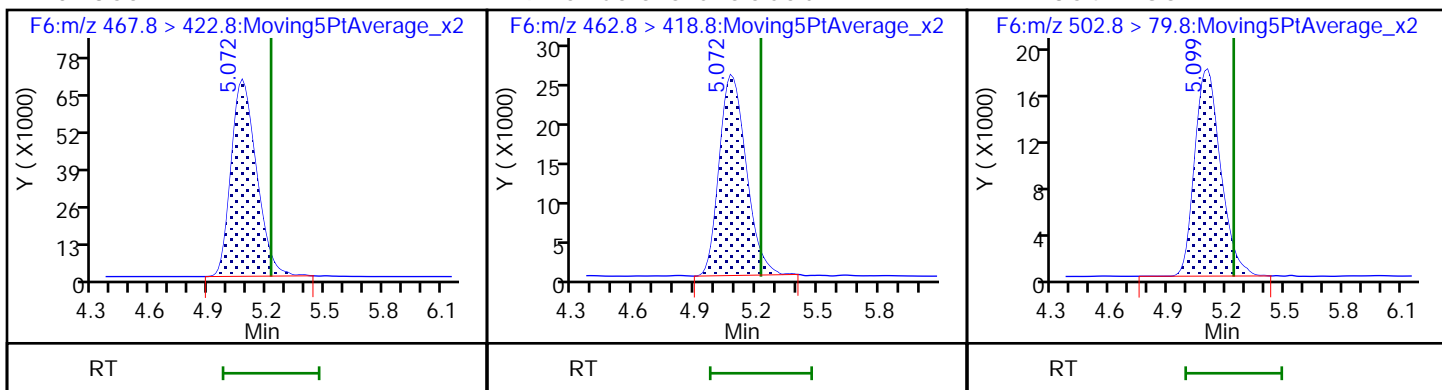
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

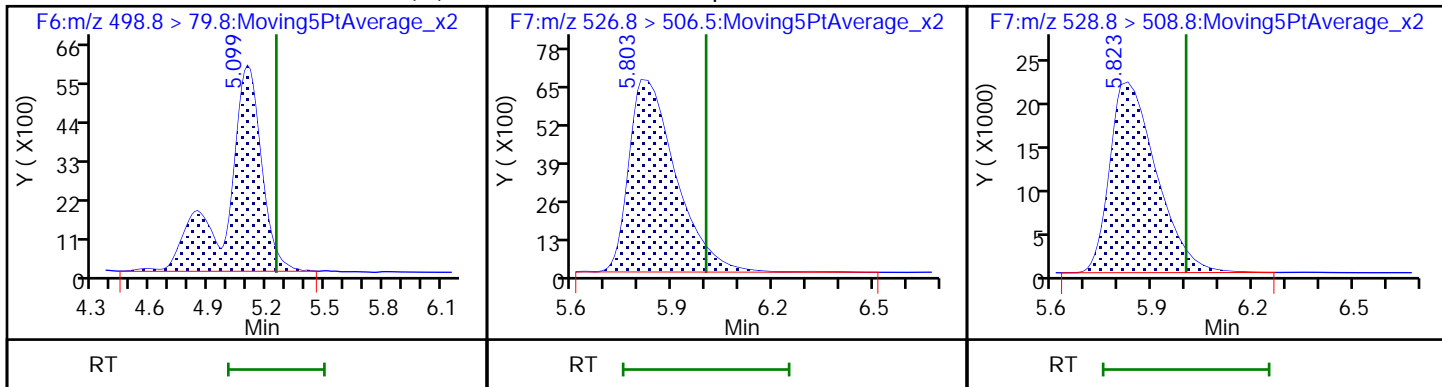
D 22 13C4 PFOS

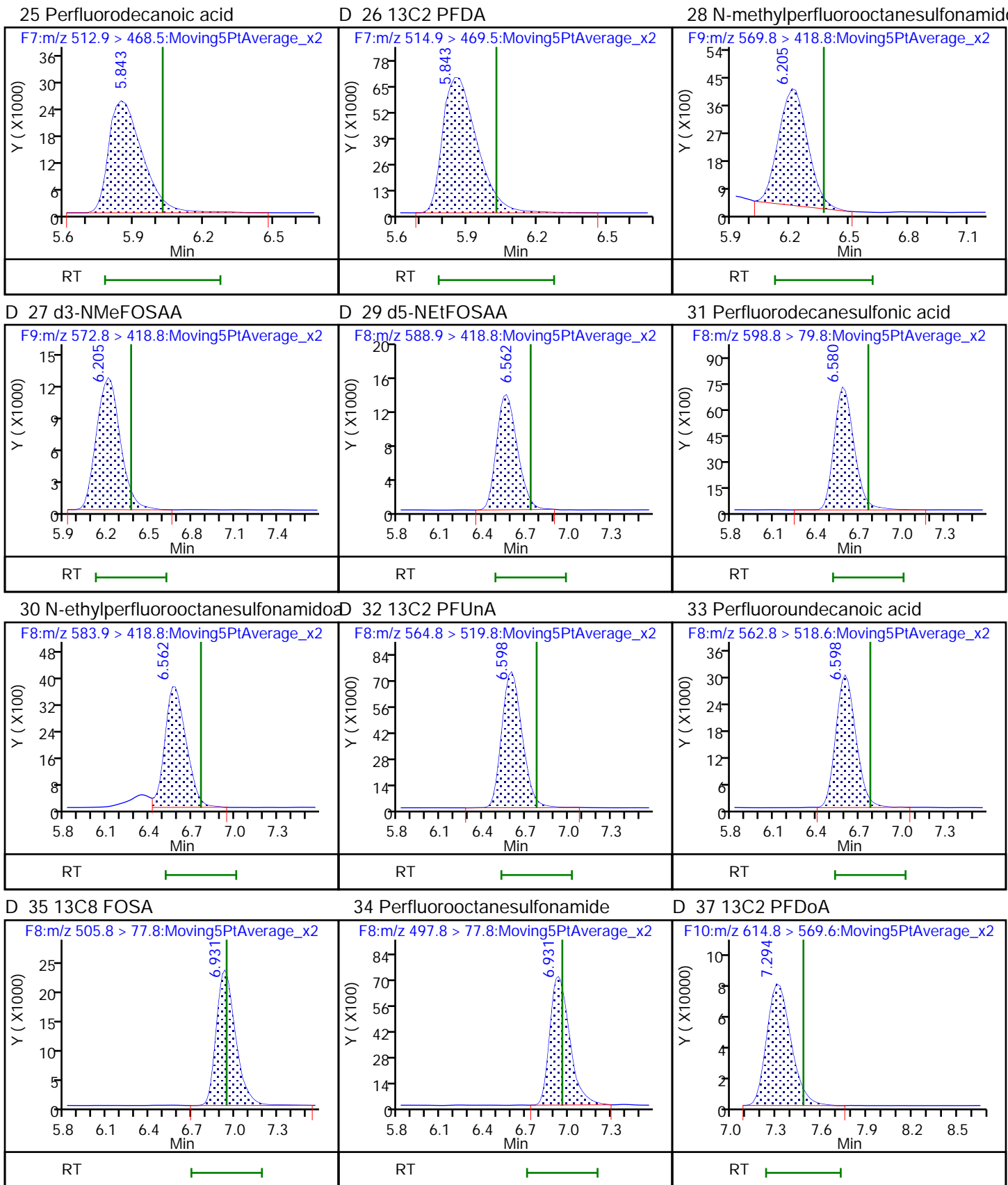


21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfonyl

D 24 M2-8:2 FTS

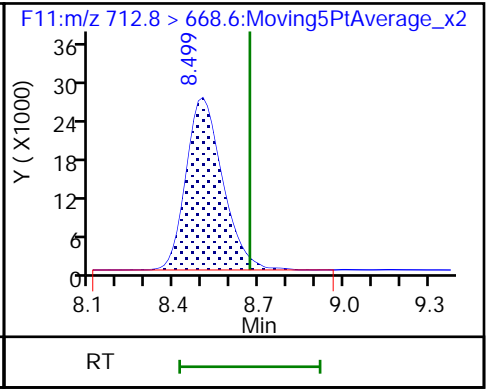
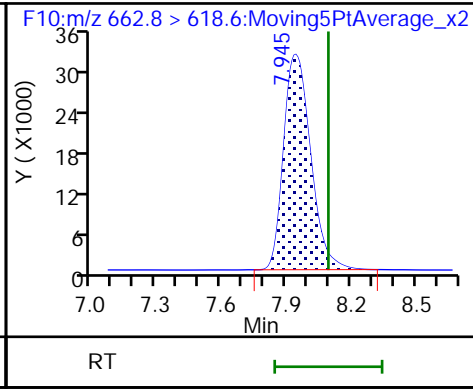
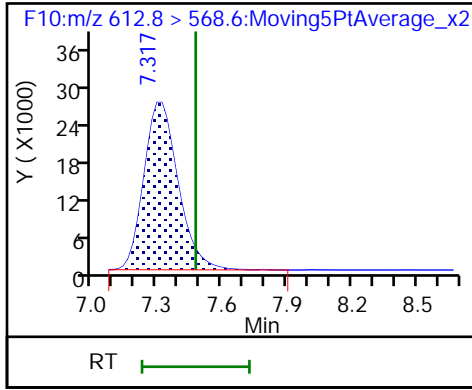




36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

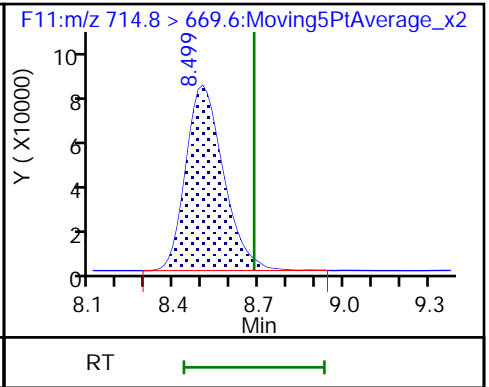
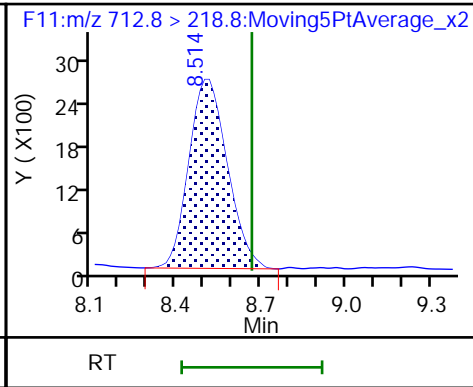
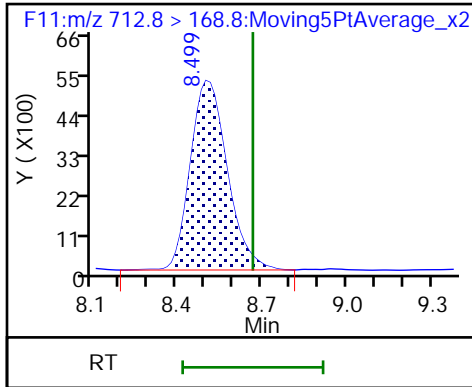
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

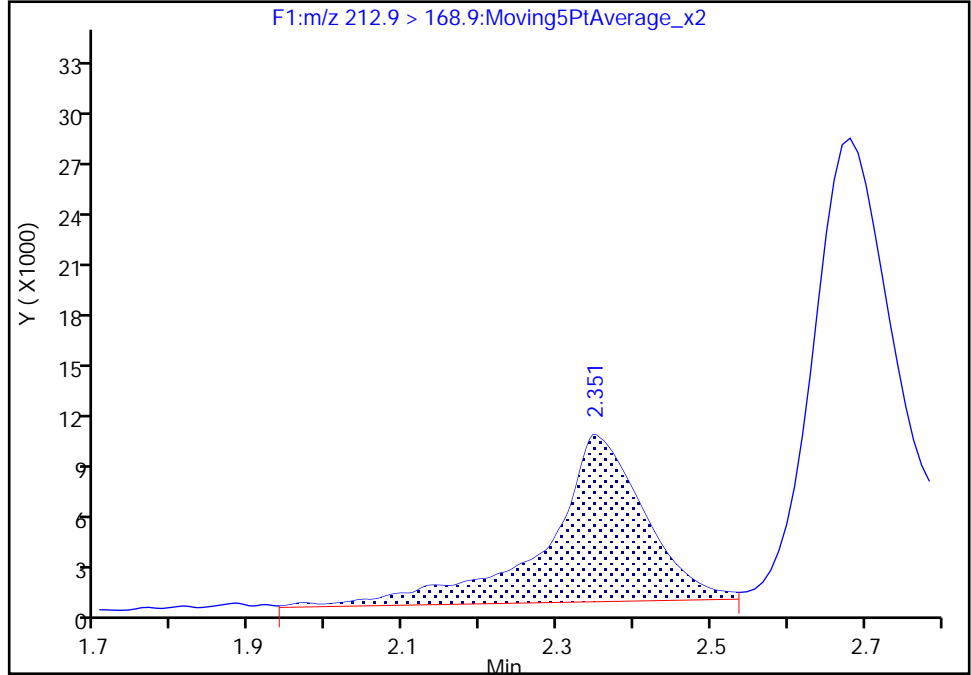
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Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

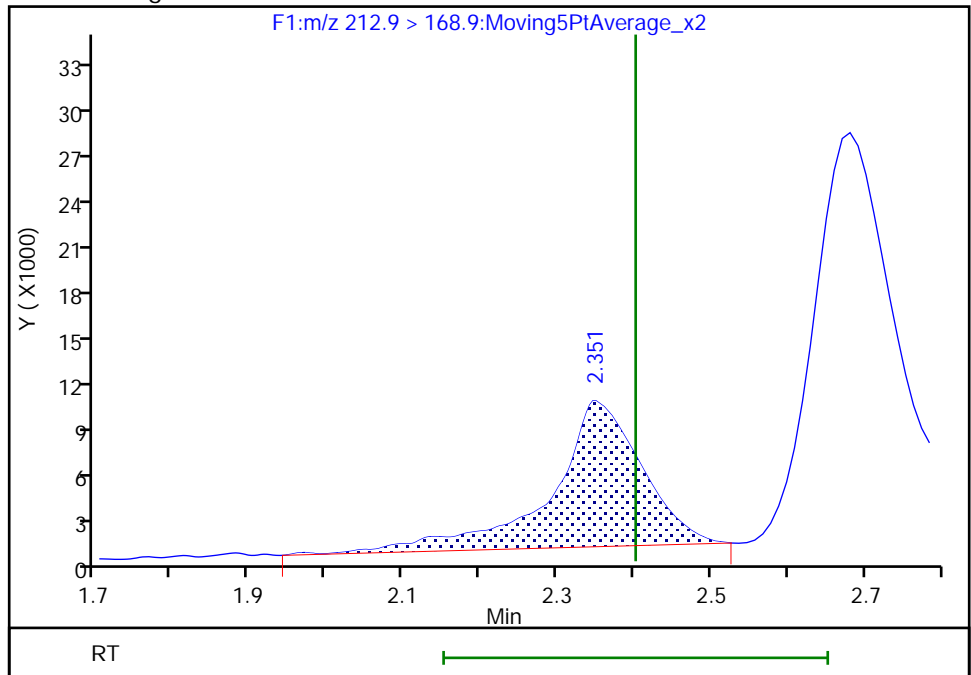
RT: 2.35
Area: 86354
Amount: 25.236010
Amount Units: ng/ml

Processing Integration Results



RT: 2.35
Area: 77345
Amount: 22.583361
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:22
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

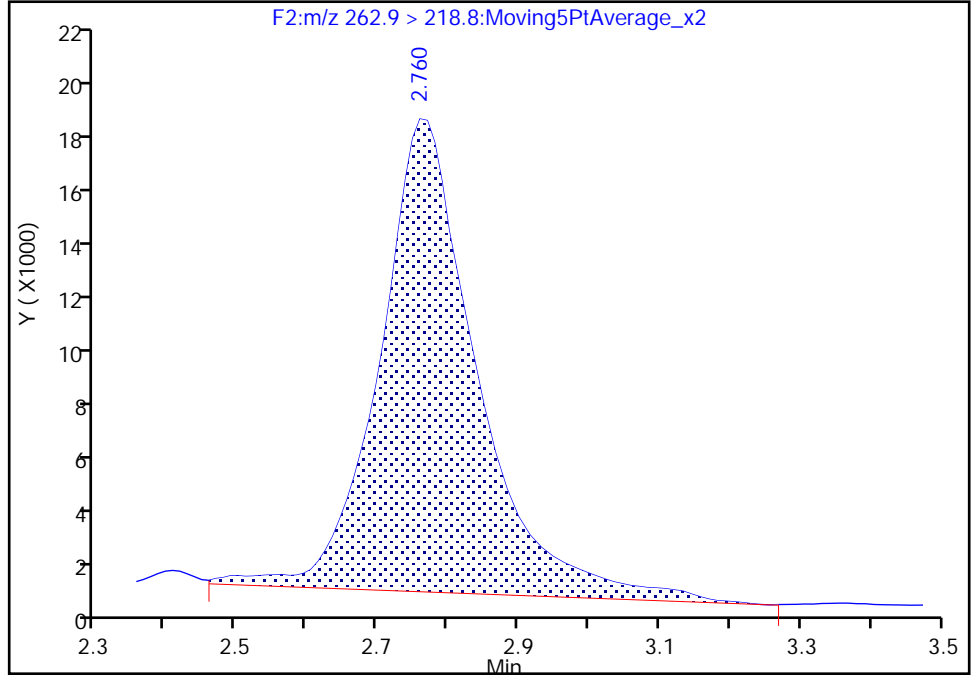
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Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

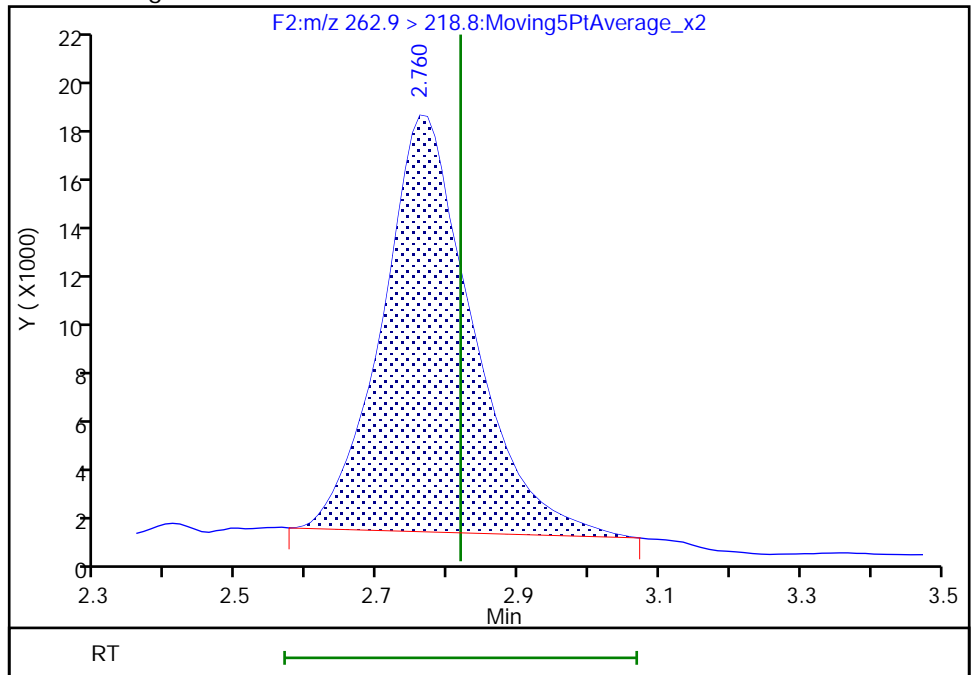
RT: 2.76
Area: 164893
Amount: 26.536695
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 147024
Amount: 23.660986
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:31
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

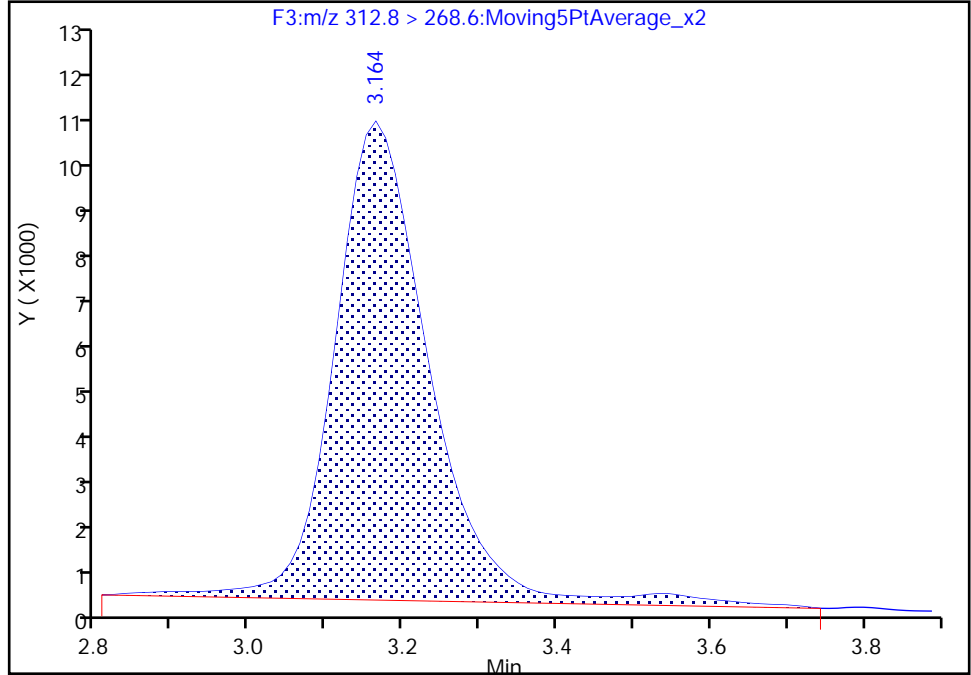
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Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

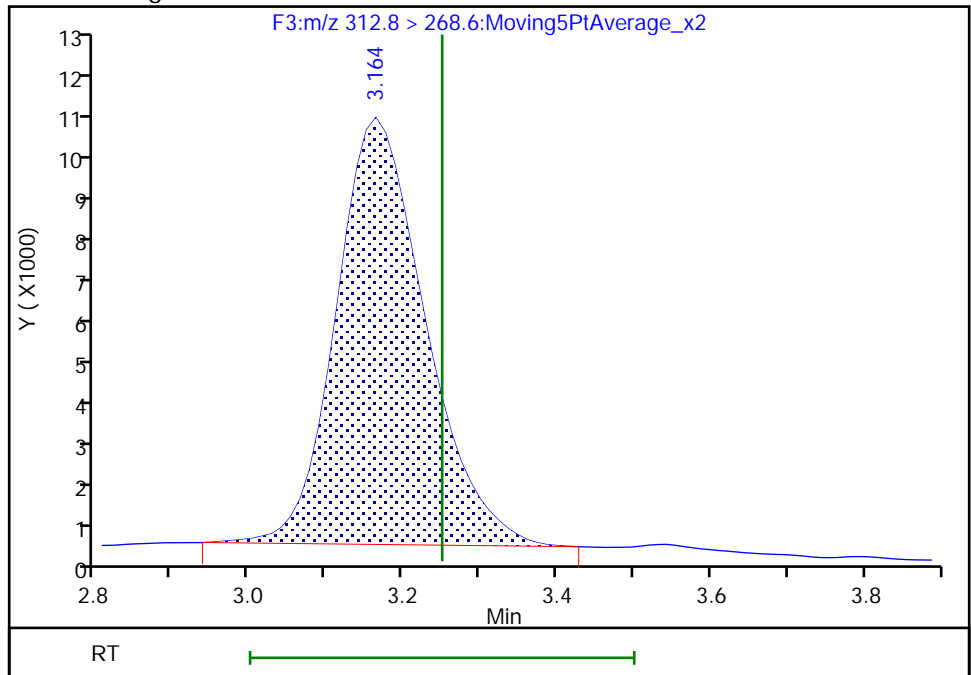
RT: 3.16
Area: 89578
Amount: 24.751327
Amount Units: ng/ml

Processing Integration Results



RT: 3.16
Area: 82436
Amount: 22.777918
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:42
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

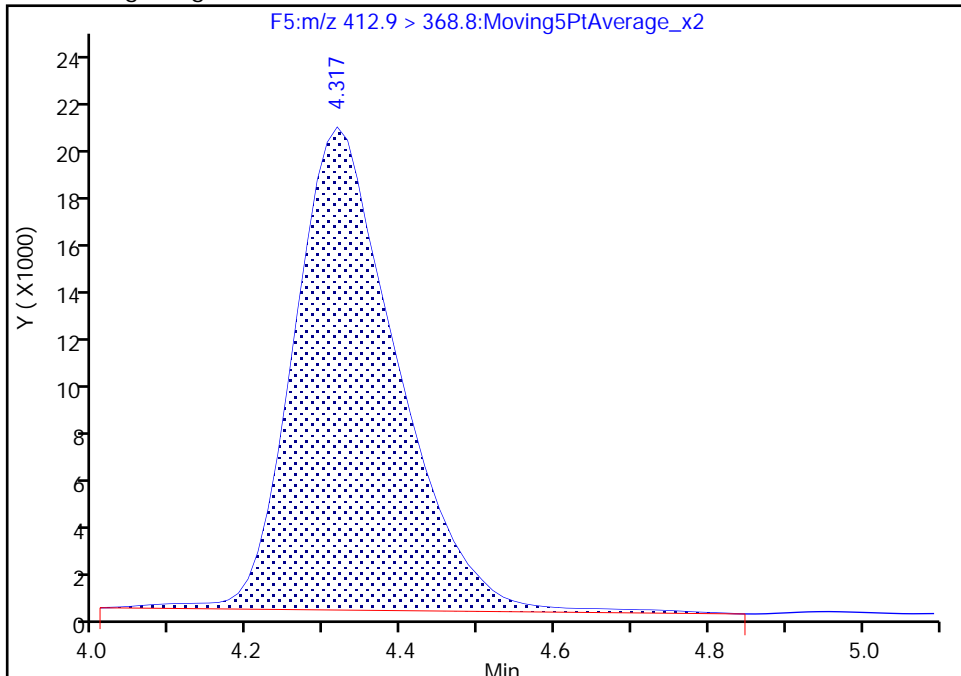
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Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

16 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

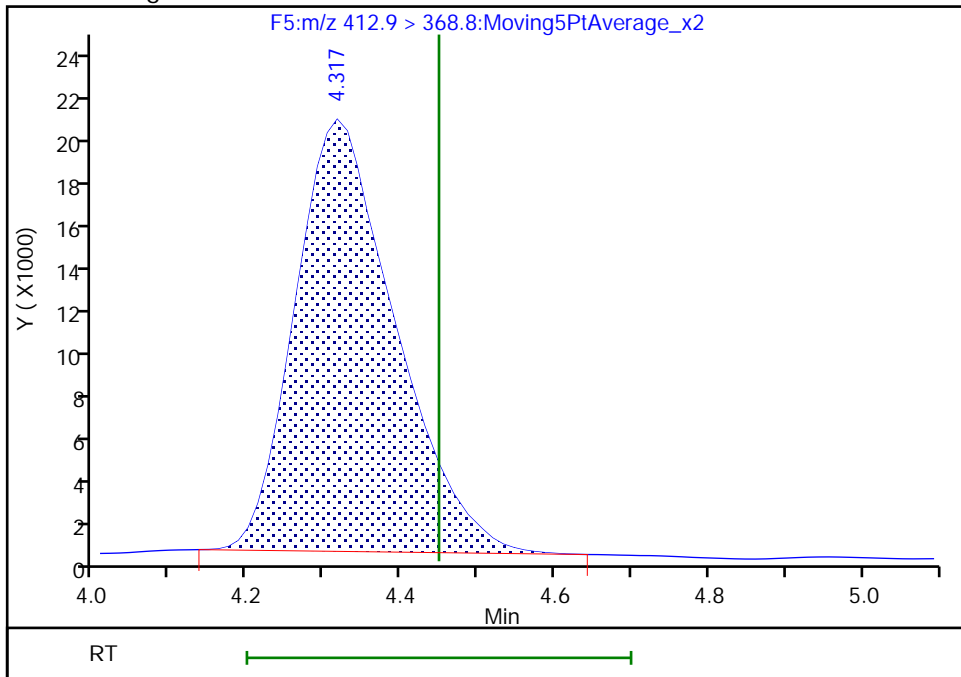
RT: 4.32
Area: 187721
Amount: 21.725653
Amount Units: ng/ml

Processing Integration Results



RT: 4.32
Area: 180279
Amount: 20.864362
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:43:00
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

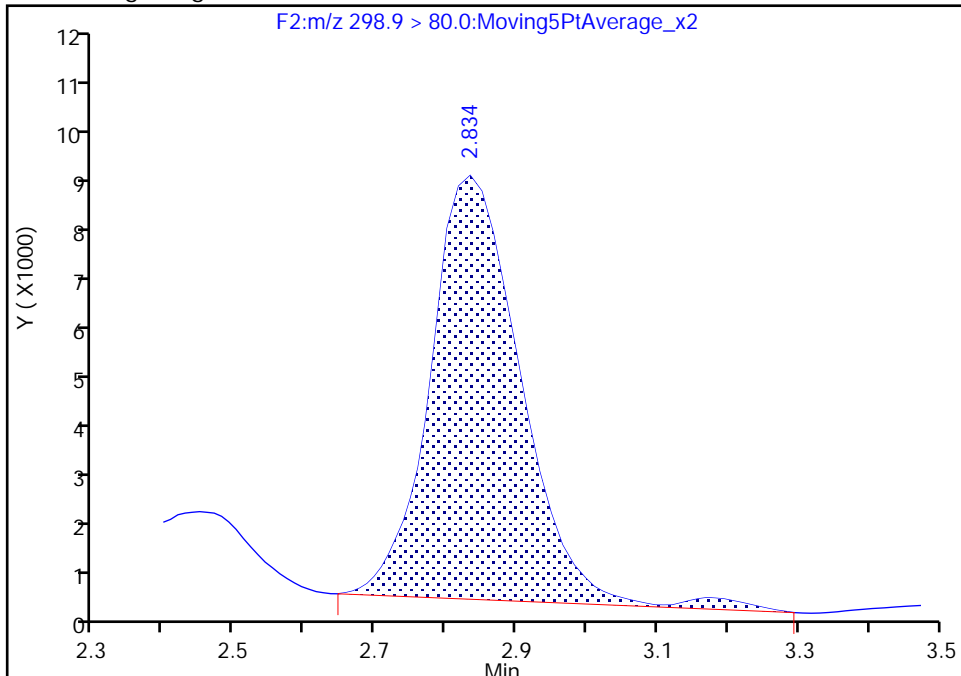
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Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

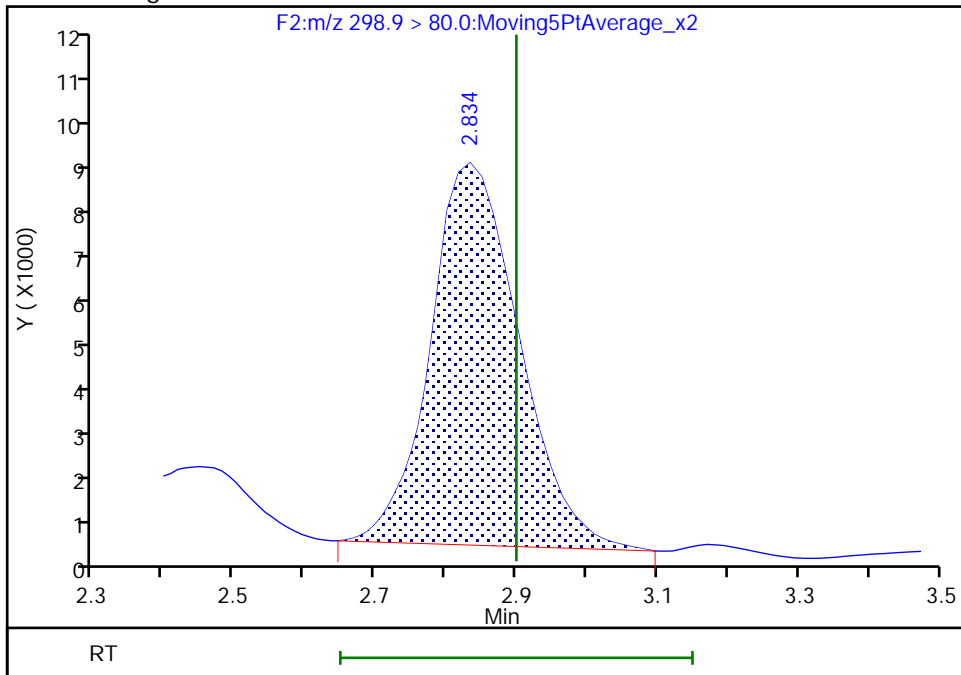
RT: 2.83
Area: 76257
Amount: 16.945070
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 74371
Amount: 16.525982
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:37
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

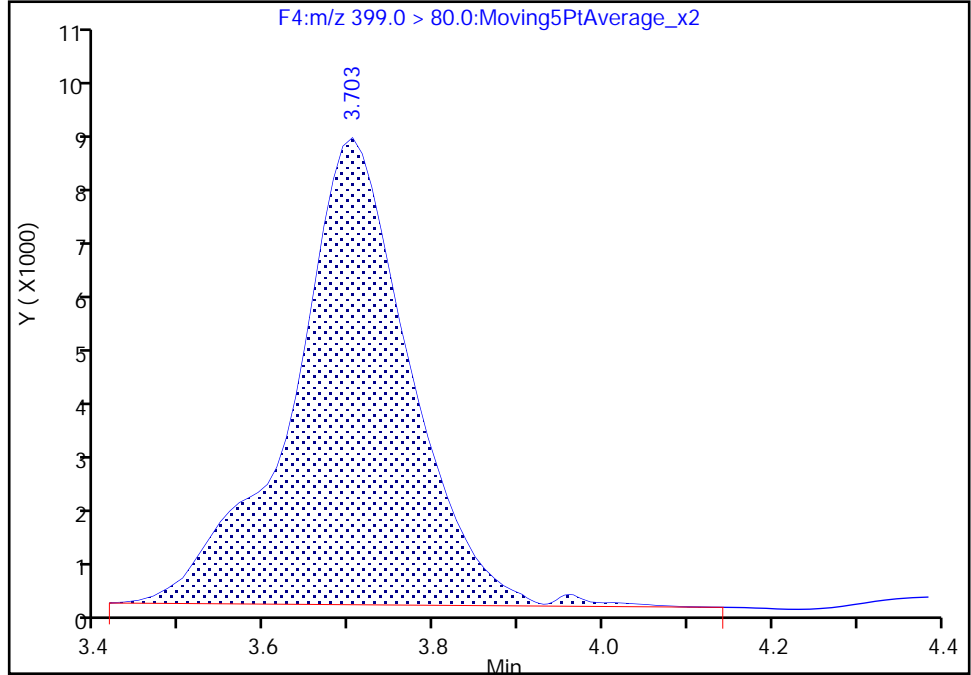
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Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F4:MRM

12 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

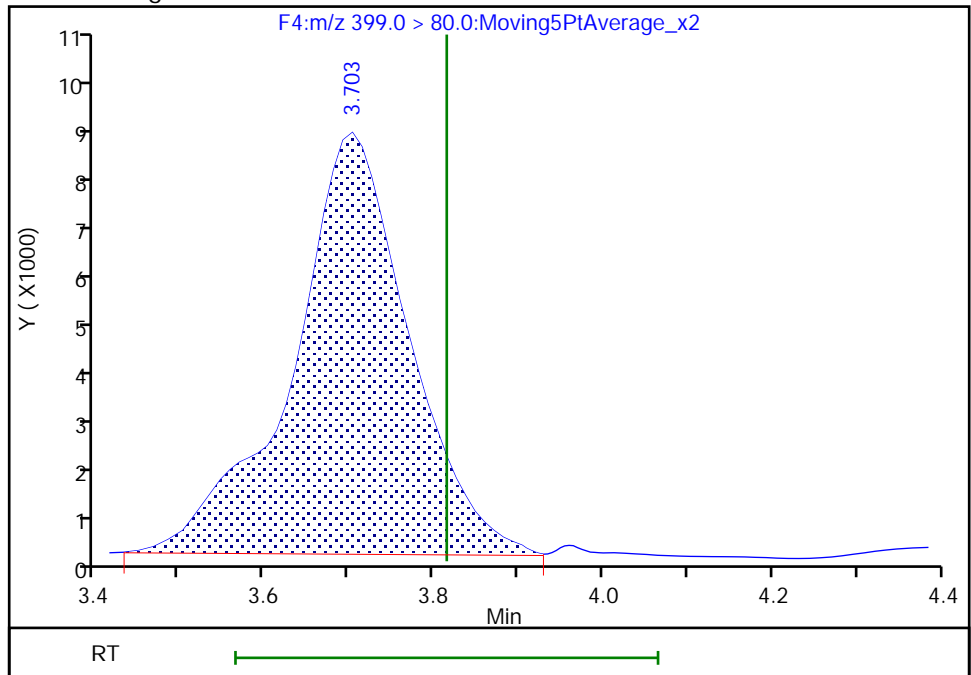
RT: 3.70
Area: 80476
Amount: 15.104254
Amount Units: ng/ml

Processing Integration Results



RT: 3.70
Area: 79773
Amount: 14.970239
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:50
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

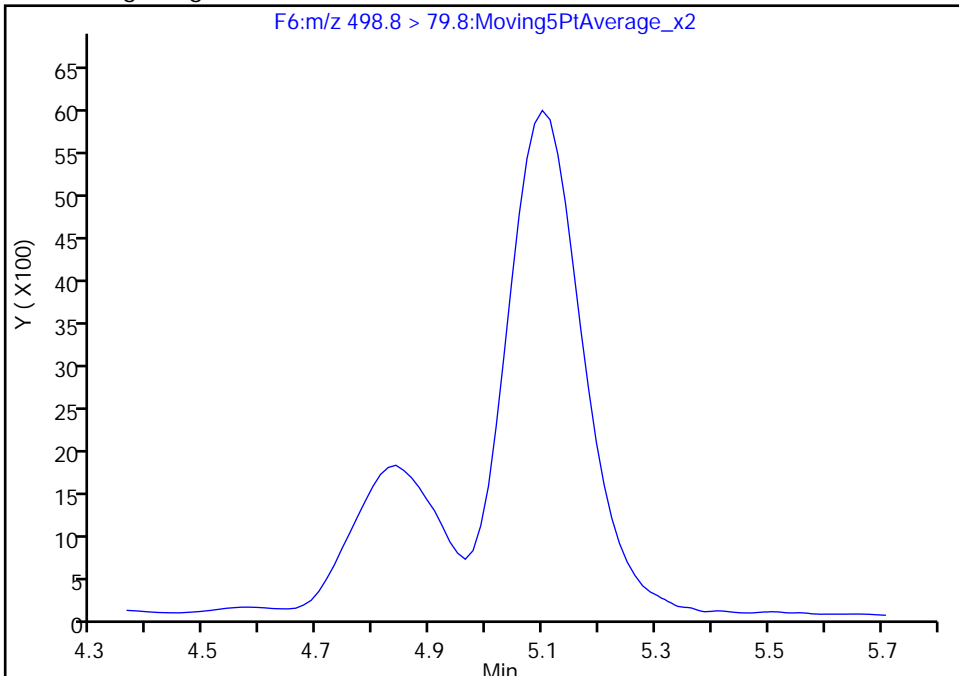
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Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

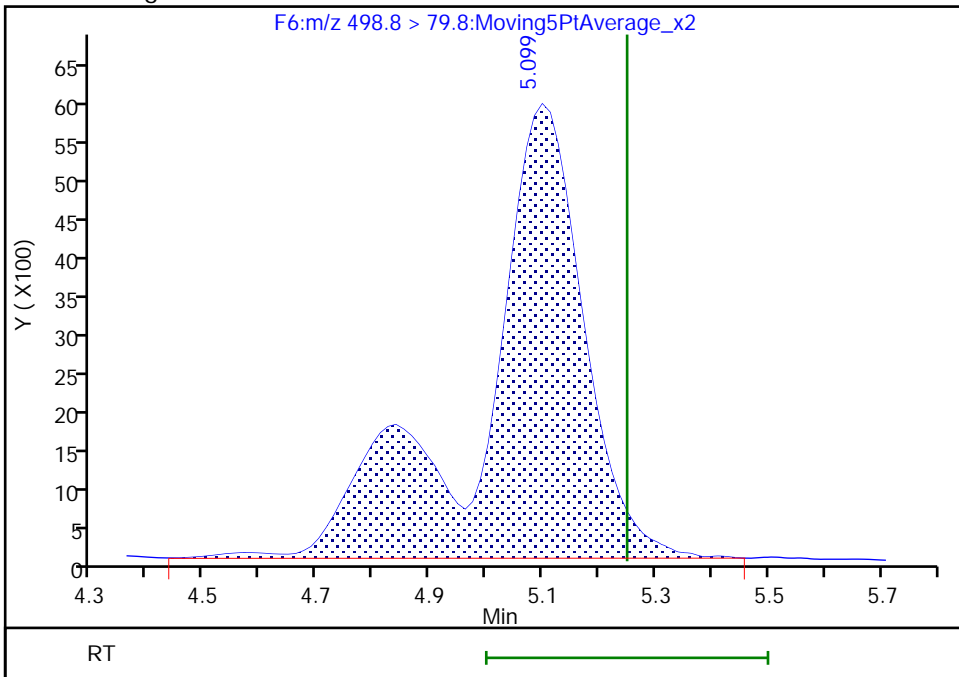
Not Detected
Expected RT: 5.25

Processing Integration Results



Manual Integration Results

RT: 5.10
Area: 74018
Amount: 20.569827
Amount Units: ng/ml



Reviewer: chirgwinb, 08-Jan-2019 17:43:17
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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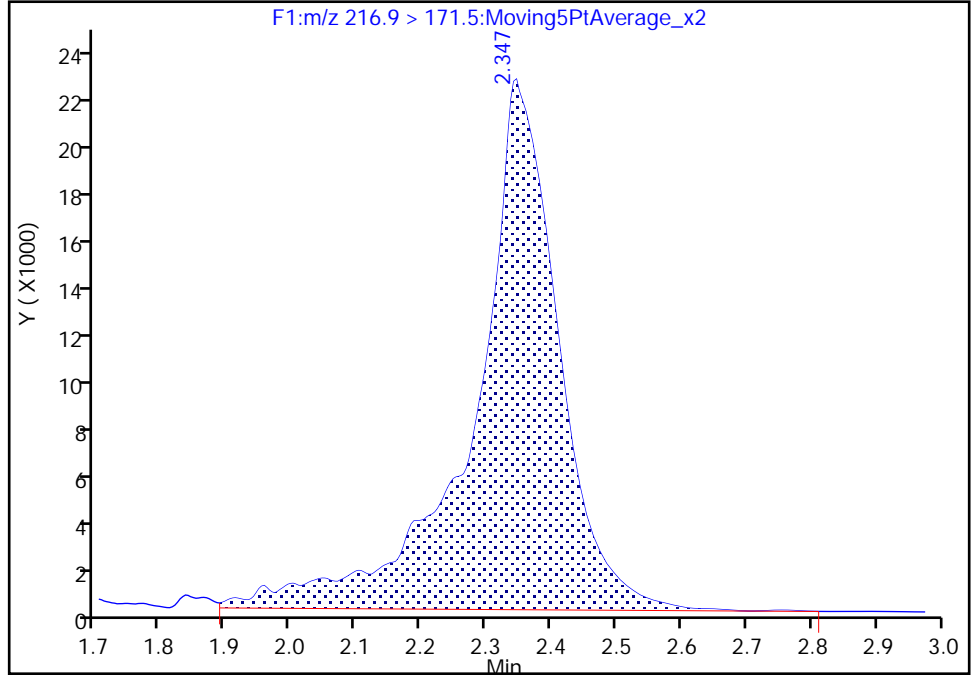
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A71.d
Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

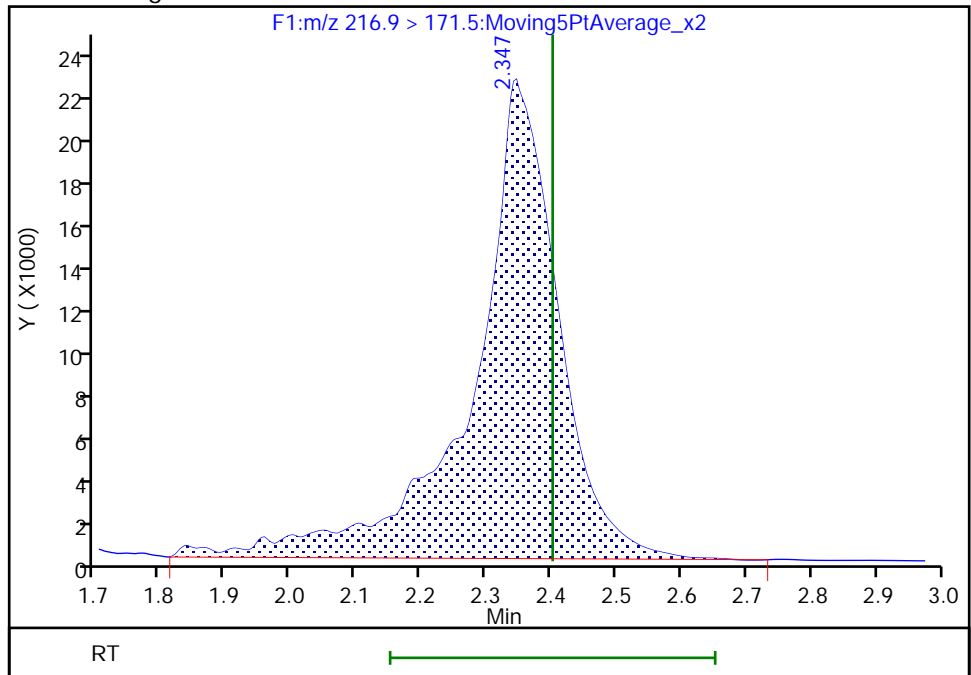
RT: 2.35
Area: 199510
Amount: 28.352809
Amount Units: ng/ml

Processing Integration Results



RT: 2.35
Area: 200423
Amount: 28.884336
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:05
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

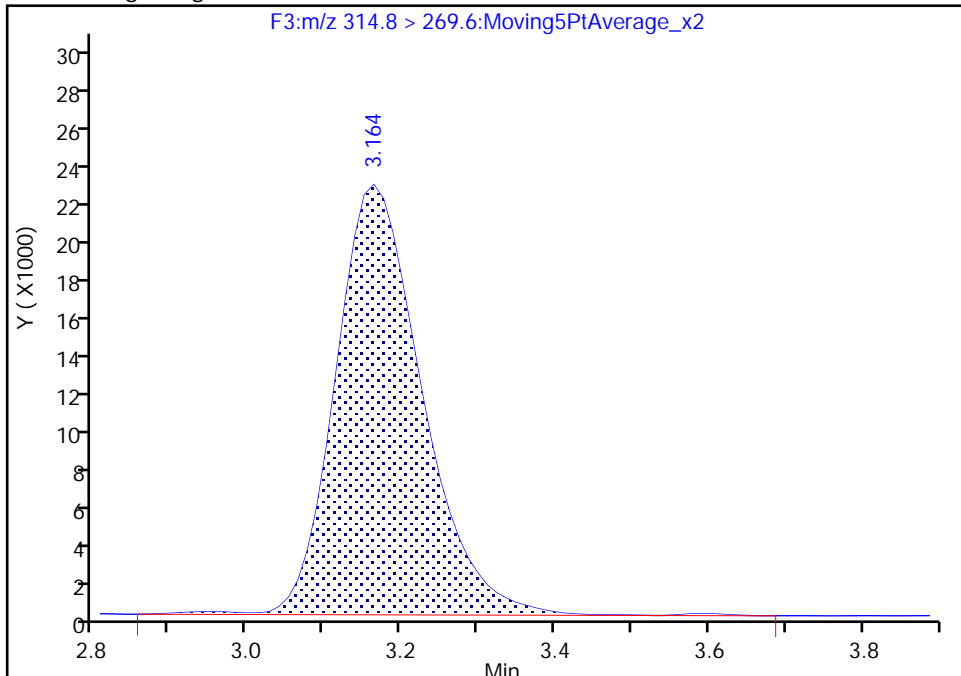
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A71.d
Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

D 7 13C2 PFHxA, CAS: STL00993

Signal: 1

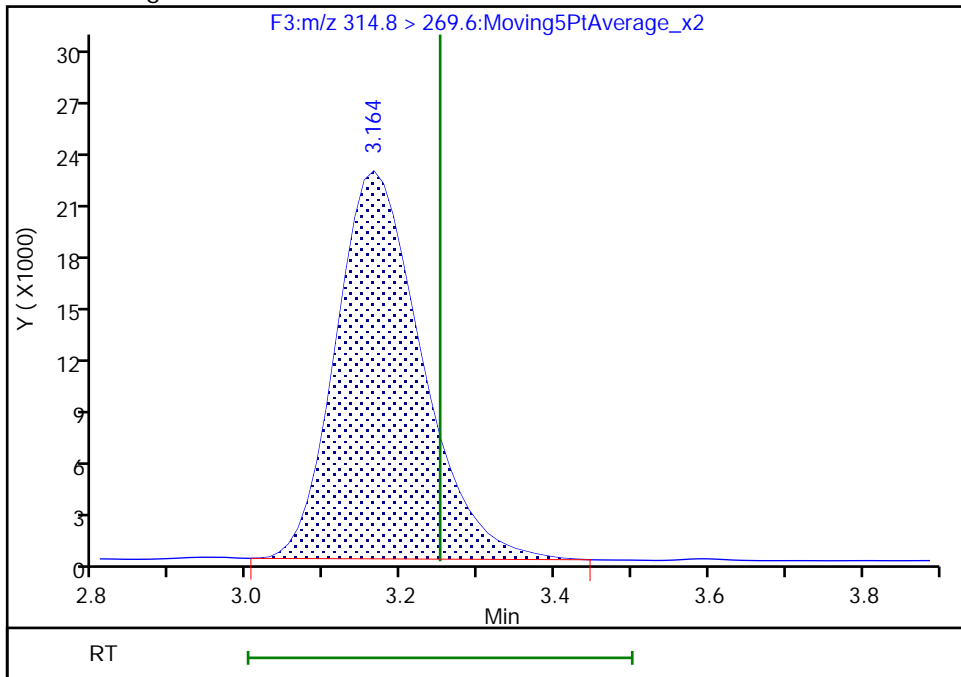
RT: 3.16
Area: 176967
Amount: 22.018957
Amount Units: ng/ml

Processing Integration Results



RT: 3.16
Area: 174407
Amount: 22.006540
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:40

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Burlington

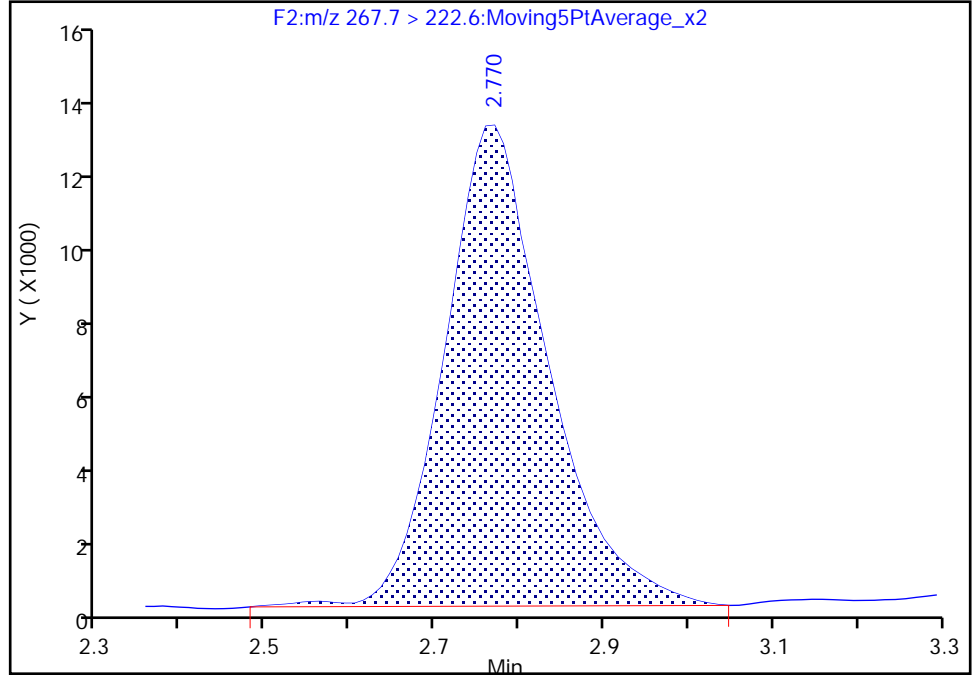
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A71.d
Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 3 13C5 PFPeA, CAS: STL01893

Signal: 1

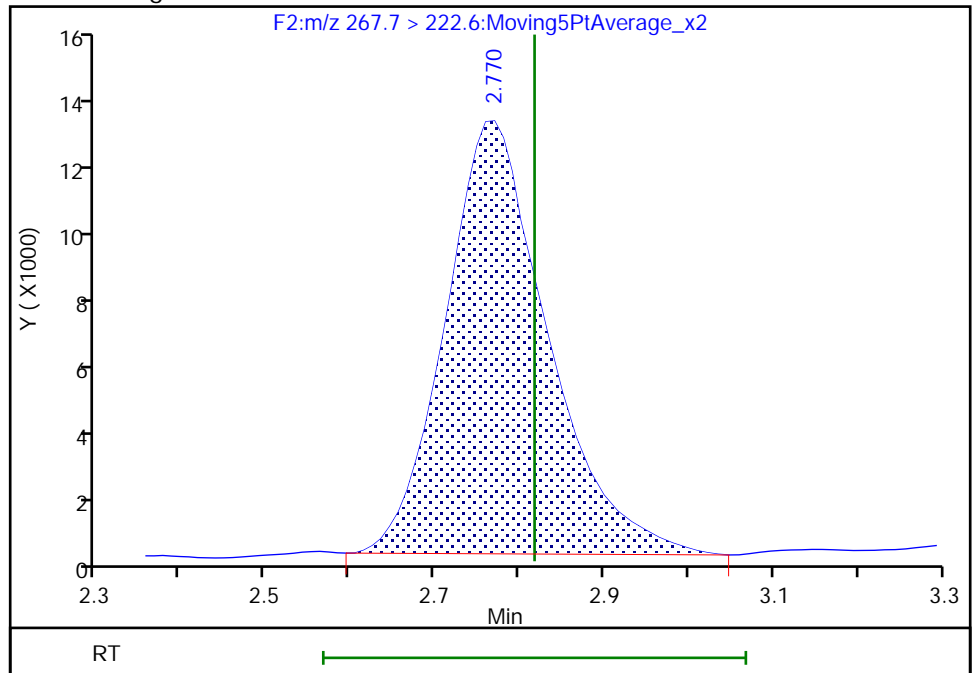
RT: 2.77
Area: 110859
Amount: 24.851095
Amount Units: ng/ml

Processing Integration Results



RT: 2.77
Area: 109093
Amount: 24.800181
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:42:29
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

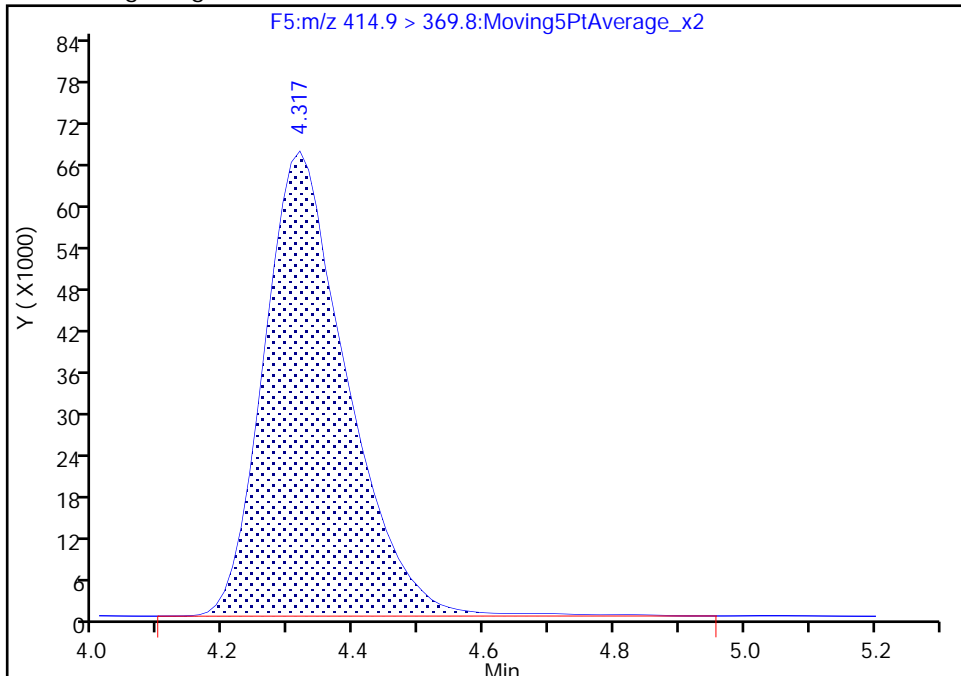
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A71.d
Injection Date: 08-Jan-2019 11:45:36 Instrument ID: LC410
Lims ID: 480-147040-A-3-B MS
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 71
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F5:MRM

* 15 13C2 PFOA, CAS: STL00623

Signal: 1

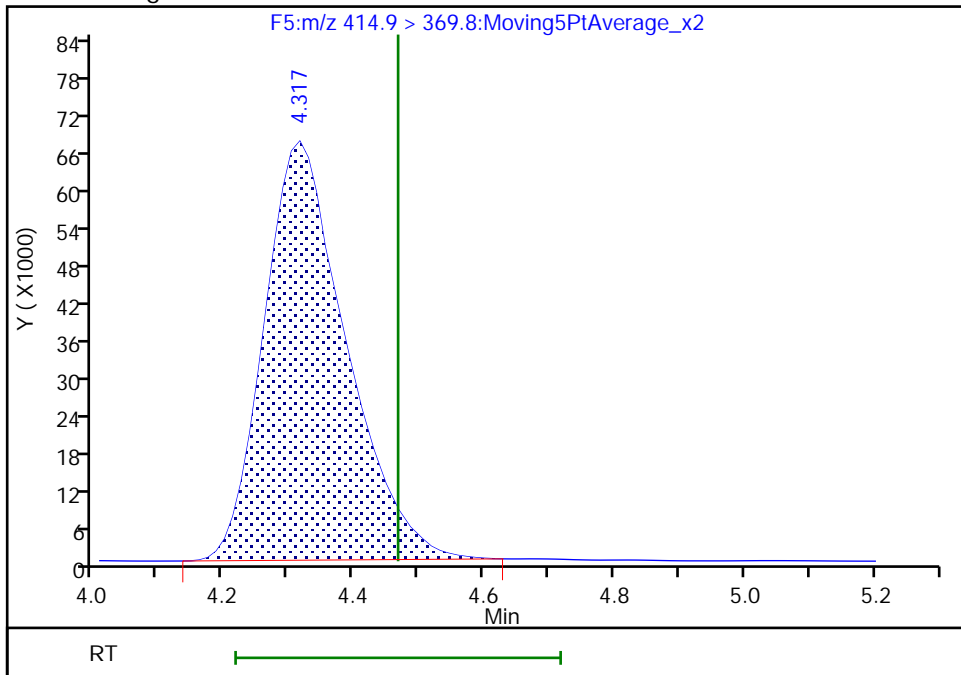
RT: 4.32
Area: 598854
Amount: 50.000000
Amount Units: ng/ml

Processing Integration Results



RT: 4.32
Area: 590524
Amount: 50.000000
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:43:05
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 MSD Lab Sample ID: 480-147040-3 MSD
 Matrix: Water Lab File ID: PF010719A72.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 12:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 298.7 (mL) Date Analyzed: 01/08/2019 12:01
 Con. Extract Vol.: 0.5 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: C-18 ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	40.8		1.7	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	39.0		1.7	0.63
307-24-4	Perfluorohexanoic acid (PFHxA)	43.0		1.7	0.20
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.7		1.7	0.27
335-67-1	Perfluorooctanoic acid (PFOA)	40.6		1.7	0.27
375-95-1	Perfluorononanoic acid (PFNA)	30.3		1.7	0.32
335-76-2	Perfluorodecanoic acid (PFDA)	33.3		1.7	0.32
2058-94-8	Perfluoroundecanoic acid (PFUnA)	35.4		1.7	0.21
307-55-1	Perfluorododecanoic acid (PFDoA)	36.3		1.7	0.29
72629-94-8	Perfluorotridecanoic acid (PFTriA)	33.8		1.7	0.20
376-06-7	Perfluorotetradecanoic acid (PFTeA)	30.6		1.7	0.38
375-73-5	Perfluorobutanesulfonic acid (PFBS)	26.9		1.7	0.37
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	25.6		1.7	0.22
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	30.2		1.7	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.7		1.7	0.64
335-77-3	Perfluorodecanesulfonic acid (PFDS)	30.1		1.7	0.44
754-91-6	Perfluorooctanesulfonamide (PFOSA)	35.0		1.7	0.47
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	27.1		17	0.38
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	28.1		17	0.59
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	37.9		17	0.84
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	34.6		17	0.47

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1
 SDG No.: _____
 Client Sample ID: MW-09-121918 MSD Lab Sample ID: 480-147040-3 MSD
 Matrix: Water Lab File ID: PF010719A72.d
 Analysis Method: 537 (modified) Date Collected: 12/19/2018 12:00
 Extraction Method: 3535 Date Extracted: 01/02/2019 13:45
 Sample wt/vol: 298.7(mL) Date Analyzed: 01/08/2019 12:01
 Con. Extract Vol.: 0.5(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: C-18 ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 138864 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	91		50-150
STL01892	13C4 PFHpA	61		50-150
STL00990	13C4 PFOA	78		50-150
STL00991	13C4 PFOS	101		50-150
STL00995	13C5 PFNA	86		50-150
STL00992	13C4 PFBA	57		25-150
STL00993	13C2 PFHxA	44	*	50-150
STL00996	13C2 PFDA	88		50-150
STL00997	13C2 PFUnA	86		50-150
STL00998	13C2 PFDoA	78		50-150
STL01056	13C8 FOSA	60		25-150
STL01893	13C5 PFPeA	58		25-150
STL02116	13C2 PFTeDA	69		50-150
STL02118	d3-NMeFOSAA	58		50-150
STL02117	d5-NEtFOSAA	73		50-150
STL02279	M2-6:2 FTS	196	*	25-150
STL02280	M2-8:2 FTS	117		25-150
STL02337	13C3 PFBS	72		50-150

TestAmerica Burlington
Target Compound Quantitation Report

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A72.d
 Lims ID: 480-147040-A-3-C MSD
 Client ID: MW-09-121918
 Sample Type: MSD
 Inject. Date: 08-Jan-2019 12:01:27 ALS Bottle#: 0 Worklist Smp#: 72
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 200-0034030-072 3MSD
 Misc. Info.: PFAS21 010719A
 Operator ID: BC Instrument ID: LC410
 Method: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PFCISO_12MRM.m
 Limit Group: LC_PFC_ICAL
 Last Update: 09-Jan-2019 12:35:28 Calib Date: 17-Oct-2018 15:27:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Burlington\ChromData\LC410\20181017-32684.b\PF101718A14.d
 Column 1 : Det: F1:MRM
 Process Host: CTX0303
 First Level Reviewer: chirgwinb Date: 08-Jan-2019 17:44:47
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
216.9 > 171.5	2.343	2.402	-0.059	1.000	189480	28.4		56.9	202	M
2 Perfluorobutanoic acid										M
212.9 > 168.9	2.343	2.402	-0.059	1.000	78966	24.4		122	1.4	M
D 3 13C5 PFPeA										M
267.7 > 222.6	2.760	2.818	-0.058	1.000	122488	29.0		58.0	105	M
4 Perfluoropentanoic acid										
262.9 > 218.8	2.760	2.818	-0.058	1.000	162346	23.3		116	29.9	
D 6 13C3 PFBS										
302.0 > 79.8	2.818	2.900	-0.082	1.000	116412	33.4		71.8	224	
5 Perfluorobutanesulfonic acid										
298.9 > 80.0	2.834	2.900	-0.066	1.006	70183	16.1		90.9	13.1	
D 7 13C2 PFHxA										
314.8 > 269.6	3.164	3.250	-0.086	1.000	166644	21.9		43.8	1188	
8 Perfluorohexanoic acid										M
312.8 > 268.6	3.152	3.250	-0.098	0.996	88875	25.7		129	43.7	M
D 9 13C4 PFHpA										
366.9 > 321.8	3.659	3.782	-0.123	1.000	426373	30.6		61.2	414	
10 Perfluoroheptanoic acid										
362.9 > 318.8	3.659	3.782	-0.123	1.000	207616	24.9		125	159	
12 Perfluorohexanesulfonic acid										
399.0 > 80.0	3.703	3.815	-0.112	1.000	86263	15.3		83.9	122	
D 11 18O2 PFHxS										
402.9 > 83.8	3.703	3.826	-0.123	1.000	172875	42.9		90.6	408	
D 13 M2-6:2 FTS										
428.6 > 408.6	4.265	4.411	-0.146	1.000	115792	93.1		196	392	
14 1H,1H,2H,2H-perfluorooctanesulfoni										
426.6 > 406.6	4.265	4.411	-0.146	1.000	54364	22.6		119	742	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorooctanoic acid										
412.9 > 368.8	4.304	4.449	-0.145	0.997	200289	24.3		121	310	
D 17 13C4 PFOA										
416.9 > 371.8	4.317	4.468	-0.151	1.000	416643	39.1		78.3	654	
* 15 13C2 PFOA										
414.9 > 369.8	4.304	4.468	-0.164		567219	50.0			2010	
18 Perfluoroheptanesulfonic acid										
448.8 > 79.8	4.342	4.505	-0.163	0.854	61970	18.0		94.6	260	
D 20 13C5 PFNA										
467.8 > 422.8	5.072	5.222	-0.150	1.000	616810	43.0		85.9	765	
19 Perfluorononanoic acid										
462.8 > 418.8	5.072	5.222	-0.150	1.000	245355	18.1		90.5	414	
D 22 13C4 PFOS										
502.8 > 79.8	5.085	5.236	-0.151	1.000	172241	48.2		101	496	
21 Perfluorooctanesulfonic acid										
498.8 > 79.8	5.085	5.250	-0.165	1.000	75024	20.1		109	306	M
23 1H,1H,2H,2H-perfluorodecanesulfoni										
526.8 > 506.5	5.803	5.998	-0.195	1.000	65917	20.7		108	521	
D 24 M2-8:2 FTS										
528.8 > 508.8	5.803	5.998	-0.195	1.000	189509	56.2		117	668	
25 Perfluorodecanoic acid										
512.9 > 468.5	5.843	6.022	-0.179	1.000	262261	19.9		99.5	270	
D 26 13C2 PFDA										
514.9 > 469.5	5.843	6.022	-0.179	1.000	653038	44.1		88.2	2832	
28 N-methylperfluorooctanesulfonamido										
569.8 > 418.8	6.205	6.367	-0.162	1.000	38537	16.2		81.1	73.6	
D 27 d3-NMeFOSAA										
572.8 > 418.8	6.205	6.367	-0.162	1.000	109442	28.9		57.9	726	
D 29 d5-NEtFOSAA										
588.9 > 418.8	6.544	6.734	-0.190	1.000	116505	36.3		72.6	1185	
31 Perfluorodecanesulfonic acid										
598.8 > 79.8	6.580	6.762	-0.182	1.294	67721	18.0		93.2	684	
30 N-ethylperfluorooctanesulfonamidoa										
583.9 > 418.8	6.562	6.762	-0.200	1.003	37685	16.8		84.0	47.4	
D 32 13C2 PFUnA										
564.8 > 519.8	6.580	6.777	-0.197	1.000	661354	42.9		85.9	2259	
33 Perfluoroundecanoic acid										
562.8 > 518.6	6.580	6.777	-0.197	1.000	286574	21.1		106	1304	
D 35 13C8 FOSA										
505.8 > 77.8	6.917	6.945	-0.028	1.000	207586	30.2		60.4	1469	
34 Perfluorooctanesulfonamide										
497.8 > 77.8	6.917	6.959	-0.042	1.000	73418	20.9		104	964	
D 37 13C2 PFDoA										
614.8 > 569.6	7.294	7.474	-0.180	1.000	762990	39.1		78.3	2570	
36 Perfluorododecanoic acid										
612.8 > 568.6	7.294	7.474	-0.180	1.000	284391	21.7		109	1355	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorotridecanoic acid										
662.8 > 618.6	7.928	8.097	-0.169	0.935	244572	20.2		101	891	
39 Perfluorotetradecanoic acid										
712.8 > 668.6	8.484	8.666	-0.182	1.000	220835	18.3	Target=1.00	91.5	1017	
712.8 > 168.8	8.499	8.666	-0.167	1.002	37249		5.93(0.90-1.10)		206	
712.8 > 218.8	8.484	8.666	-0.182	1.000	25118		8.79(0.90-1.10)		183	
D 40 13C2 PFTeDA										
714.8 > 669.6	8.484	8.681	-0.197	1.000	619113	34.6		69.2	923	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A72.d

Injection Date: 08-Jan-2019 12:01:27

Instrument ID: LC410

Lims ID: 480-147040-A-3-C MSD

Client ID: MW-09-121918

Operator ID: BC

ALS Bottle#: 0

Worklist Smp#: 72

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

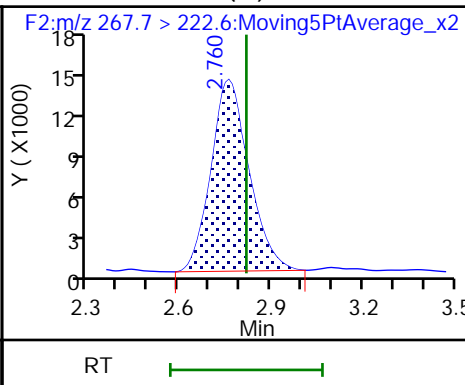
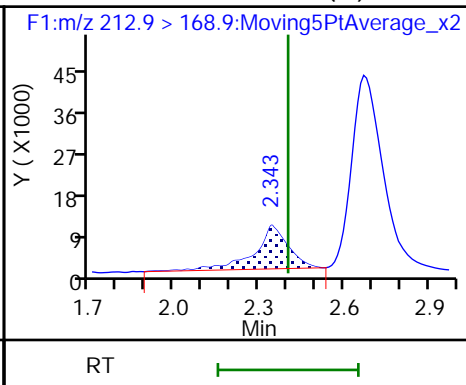
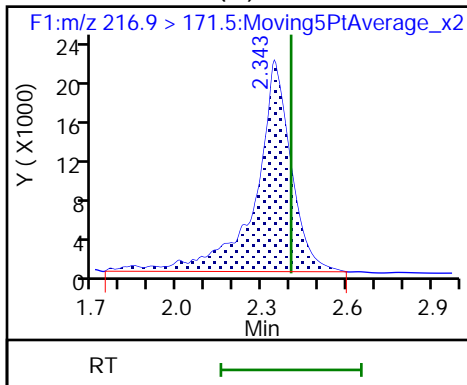
Method: PFCISO_12MRM

Limit Group: LC_PFC_ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

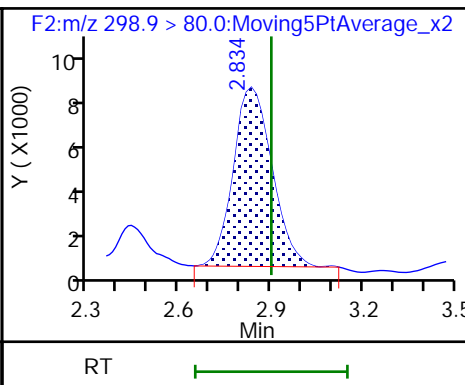
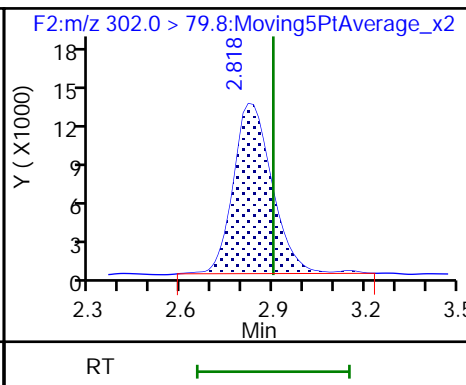
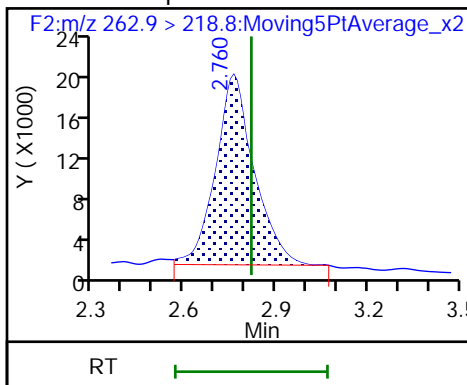
D 3 13C5 PFPeA (M)



4 Perfluoropentanoic acid

D 6 13C3 PFBS

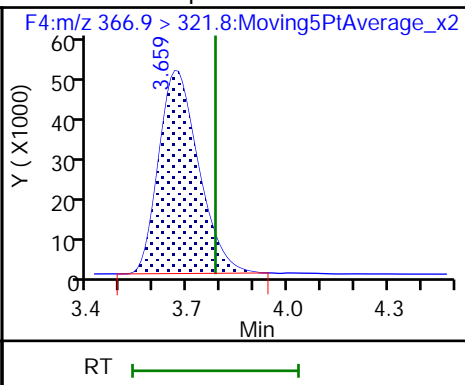
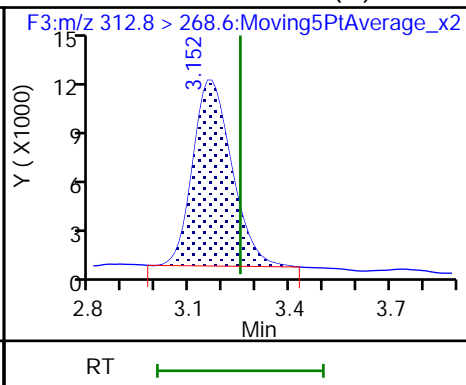
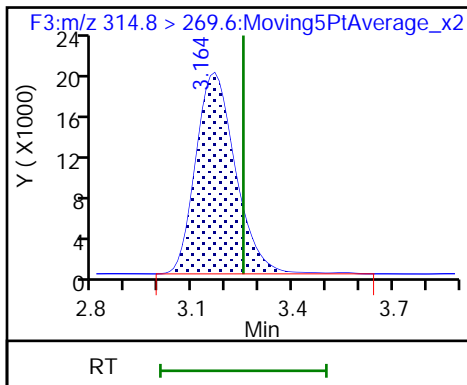
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

8 Perfluorohexanoic acid (M)

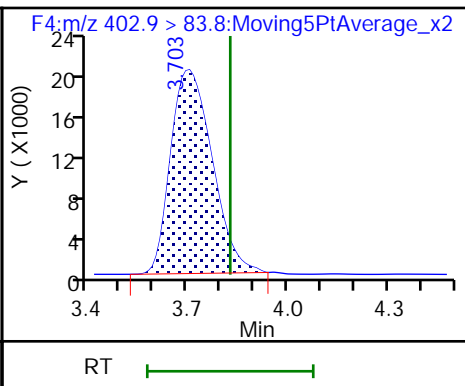
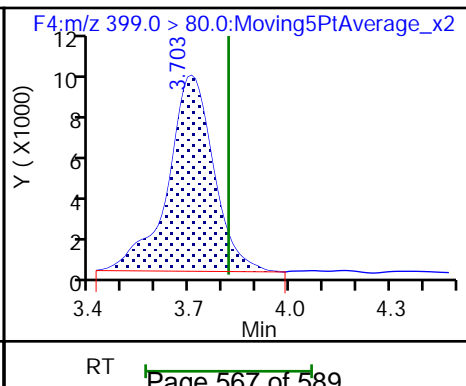
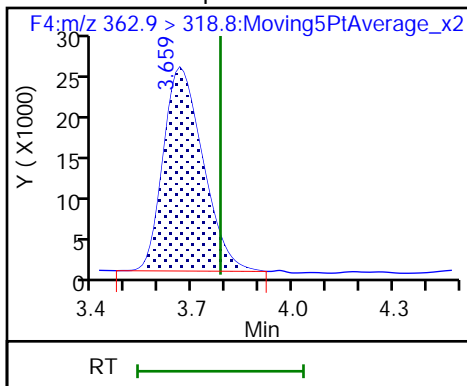
D 9 13C4 PFHpA



10 Perfluoroheptanoic acid

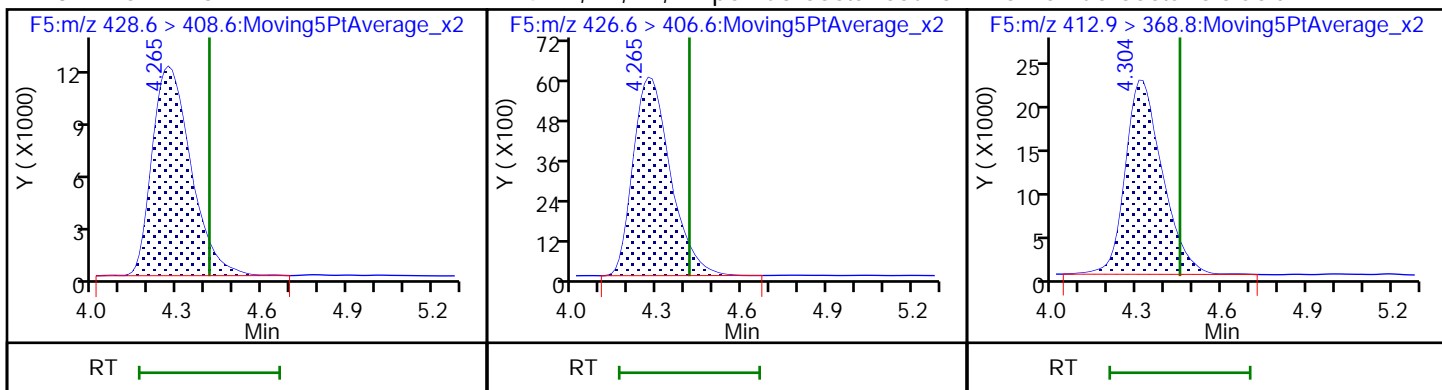
12 Perfluorohexanesulfonic acid

D 11 18O2 PFHxS



D 13 M2-6:2 FTS

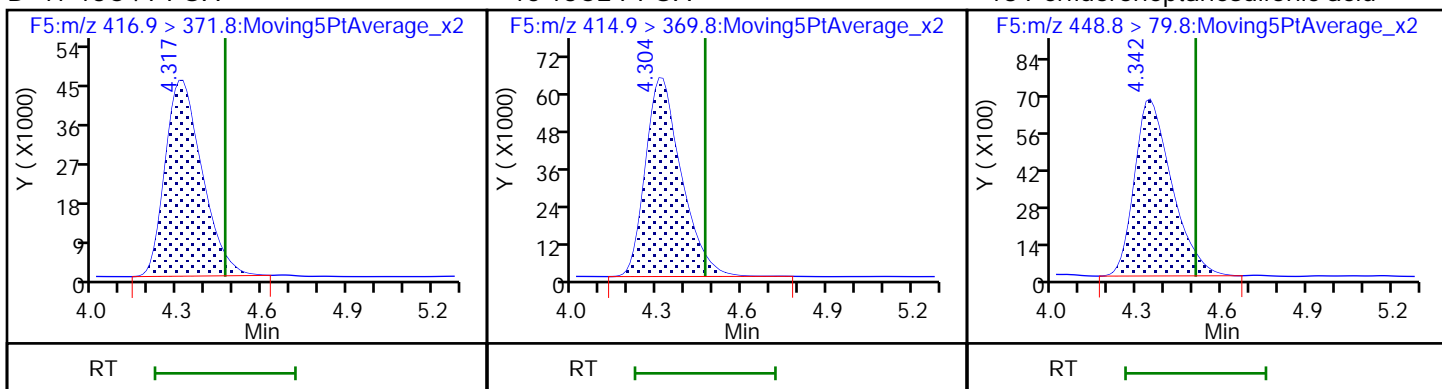
14 1H,1H,2H,2H-perfluorooctanesulfonyl 16 Perfluorooctanoic acid



D 17 13C4 PFOA

* 15 13C2 PFOA

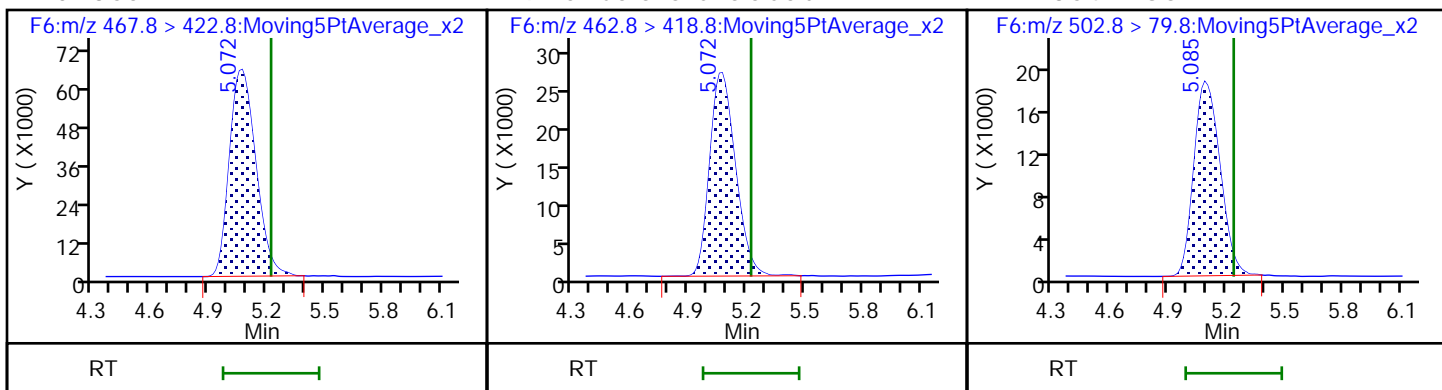
18 Perfluoroheptanesulfonic acid



D 20 13C5 PFNA

19 Perfluorononanoic acid

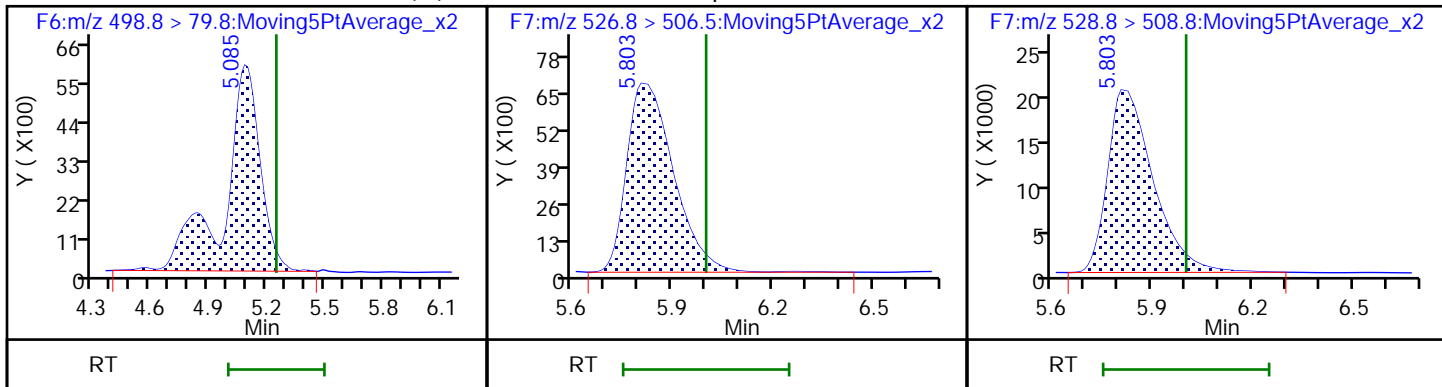
D 22 13C4 PFOS

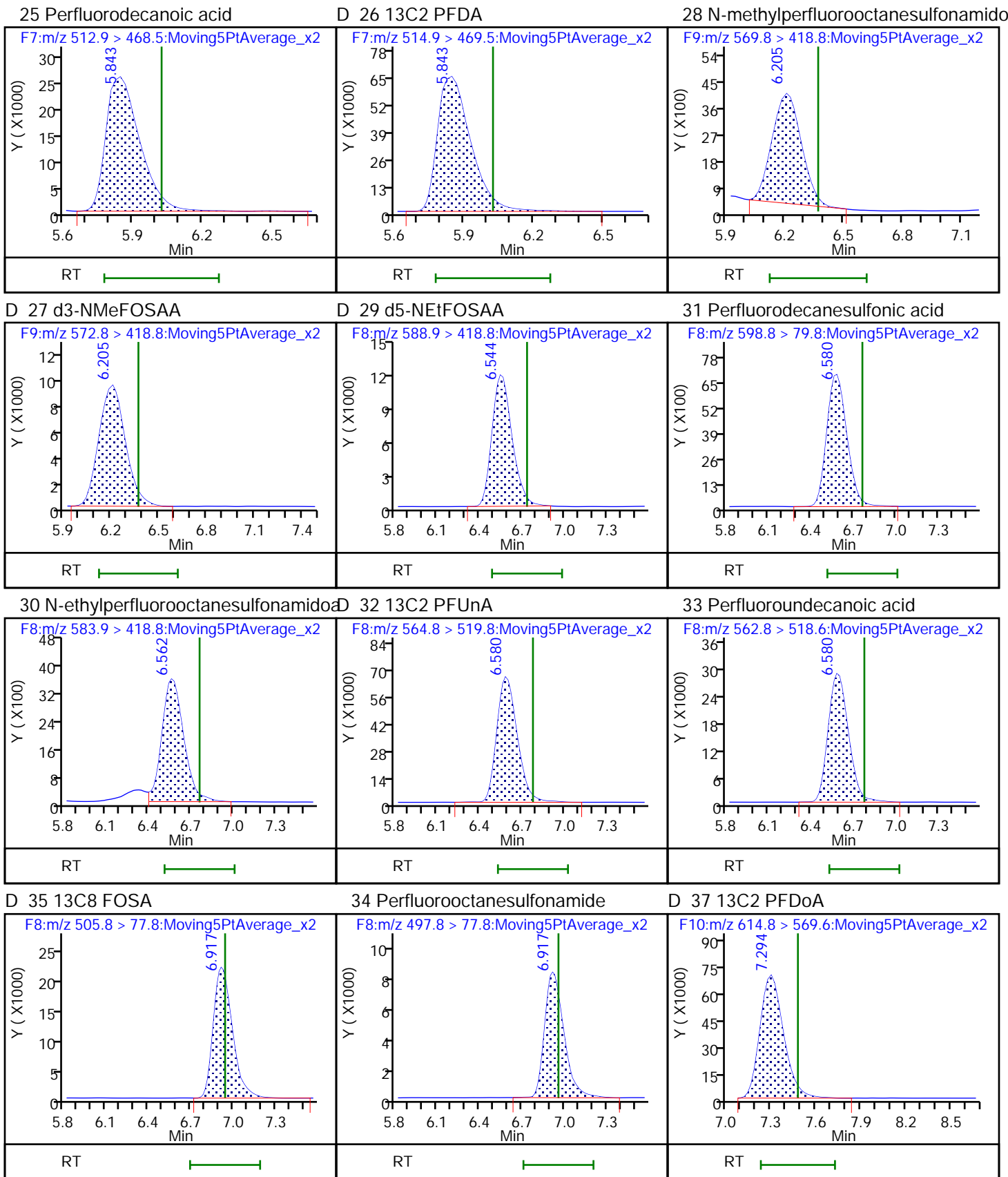


21 Perfluorooctanesulfonic acid (M)

23 1H,1H,2H,2H-perfluorodecanesulfonyl

D 24 M2-8:2 FTS

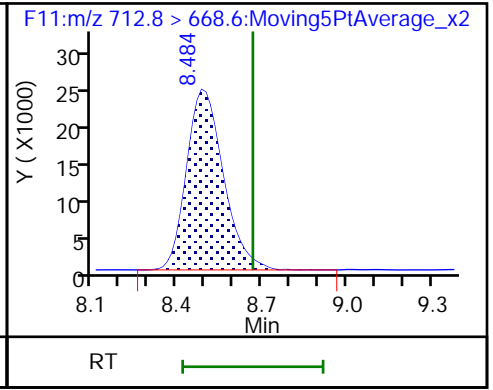
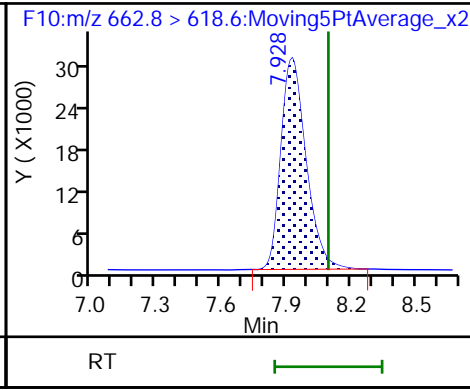
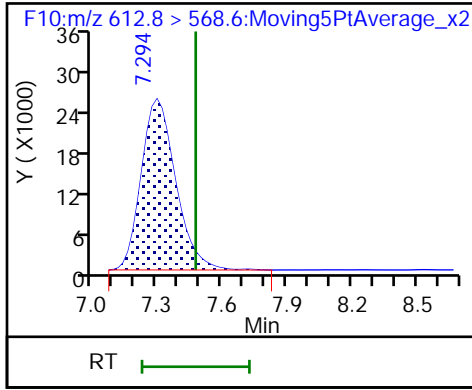




36 Perfluorododecanoic acid

38 Perfluorotridecanoic acid

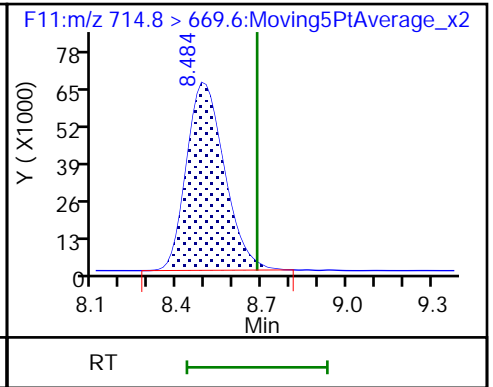
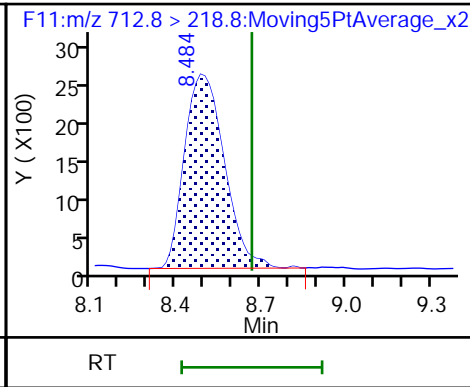
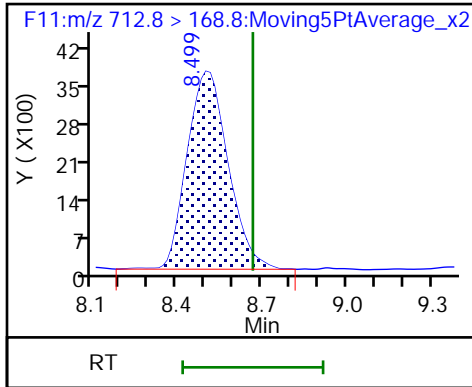
39 Perfluorotetradecanoic acid



39 Perfluorotetradecanoic acid

39 Perfluorotetradecanoic acid

D 40 13C2 PFTeDA



TestAmerica Burlington

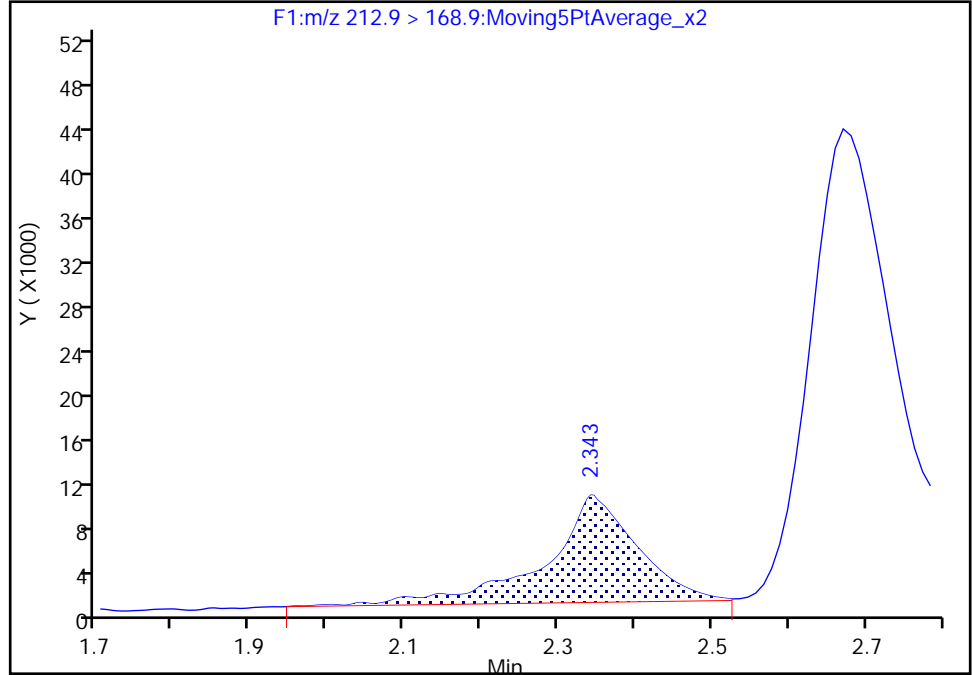
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A72.d
Injection Date: 08-Jan-2019 12:01:27 Instrument ID: LC410
Lims ID: 480-147040-A-3-C MSD
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 72
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

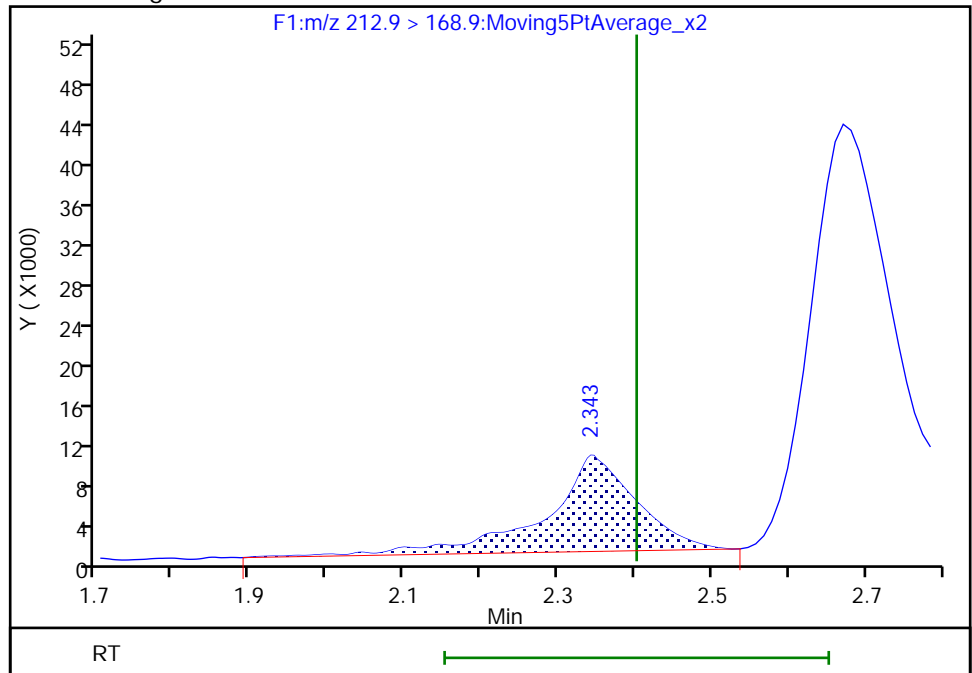
RT: 2.34
Area: 79906
Amount: 24.696233
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 78966
Amount: 24.403471
Amount Units: ng/ml

Manual Integration Results



TestAmerica Burlington

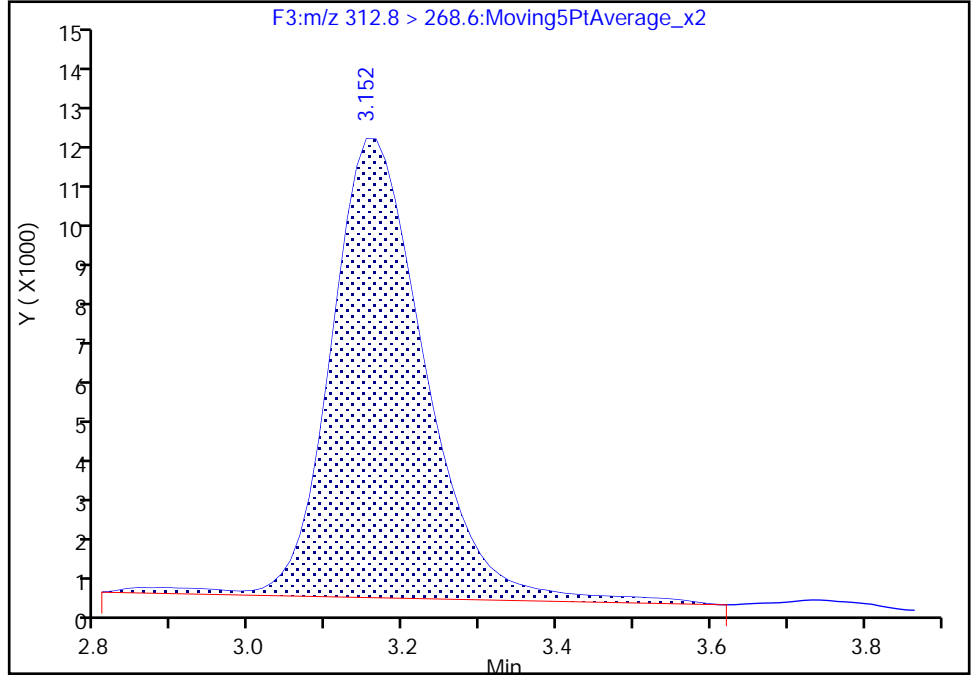
Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A72.d
Injection Date: 08-Jan-2019 12:01:27 Instrument ID: LC410
Lims ID: 480-147040-A-3-C MSD
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 72
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F3:MRM

8 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

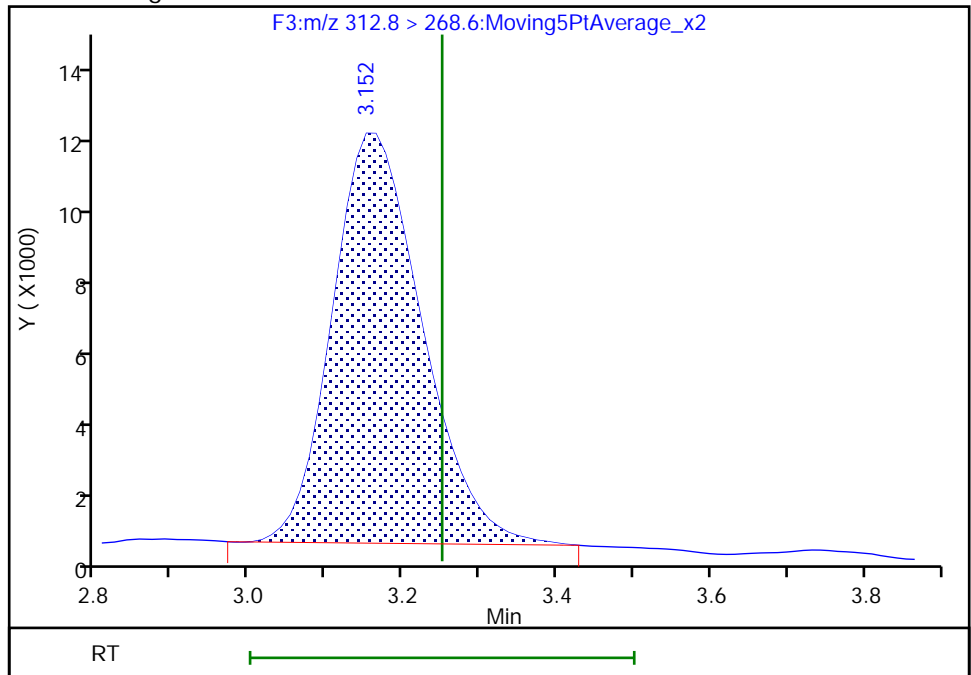
RT: 3.15
Area: 94783
Amount: 27.409543
Amount Units: ng/ml

Processing Integration Results



RT: 3.15
Area: 88875
Amount: 25.701056
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:44:12
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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TestAmerica Burlington

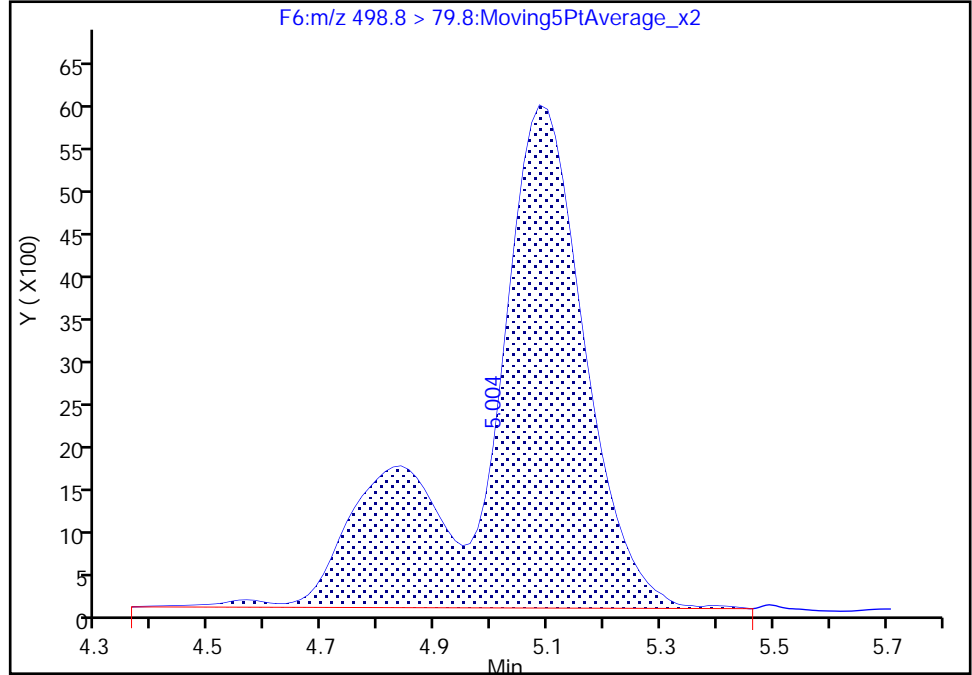
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Injection Date: 08-Jan-2019 12:01:27 Instrument ID: LC410
Lims ID: 480-147040-A-3-C MSD
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 72
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F6:MRM

21 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

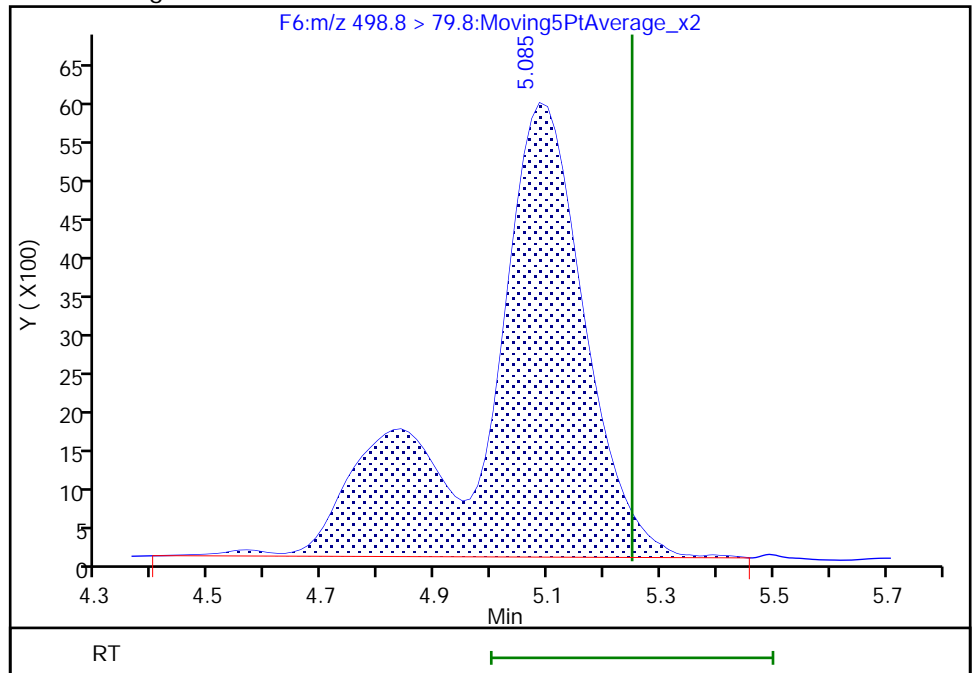
RT: 5.00
Area: 75304
Amount: 20.217045
Amount Units: ng/ml

Processing Integration Results



RT: 5.09
Area: 75024
Amount: 20.141873
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:44:02
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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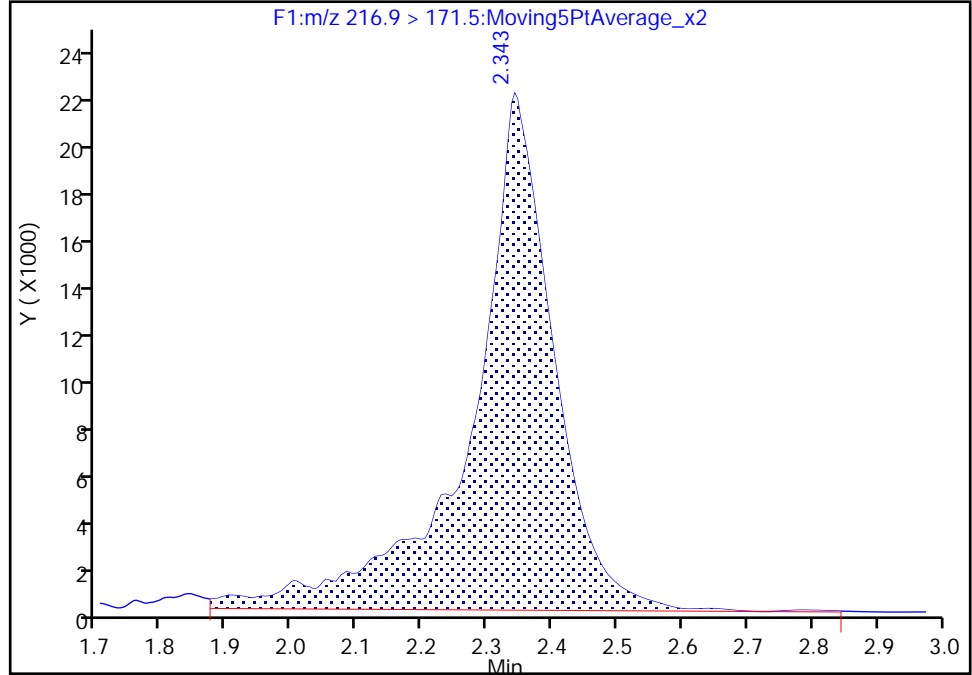
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A72.d
Injection Date: 08-Jan-2019 12:01:27 Instrument ID: LC410
Lims ID: 480-147040-A-3-C MSD
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 72
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F1:MRM

D 1 13C4 PFBA, CAS: STL00992
Signal: 1

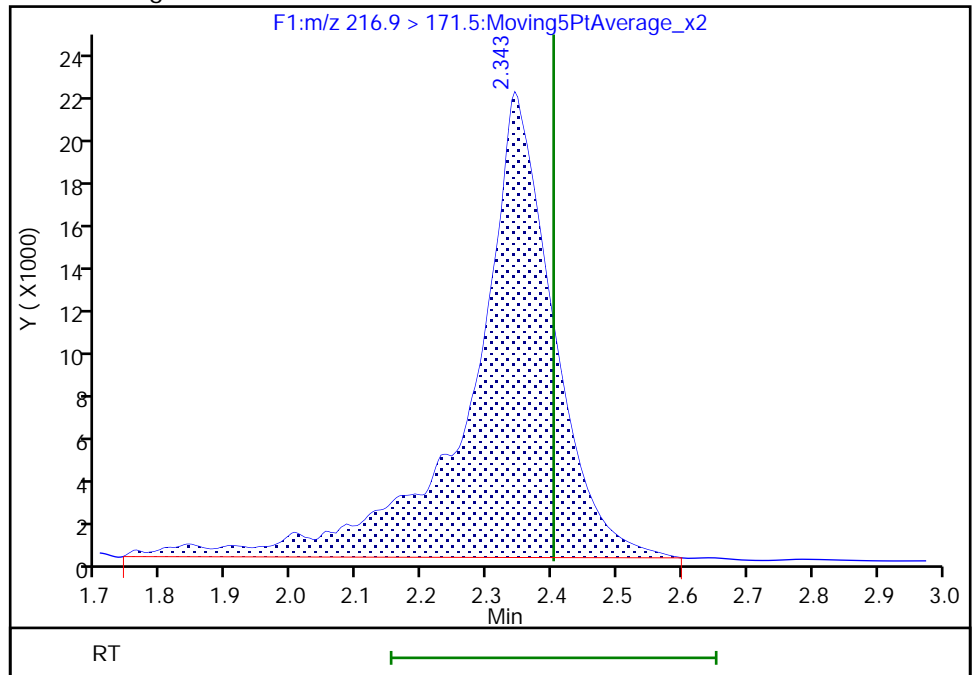
RT: 2.34
Area: 190591
Amount: 28.595915
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 189480
Amount: 28.429223
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:44:26
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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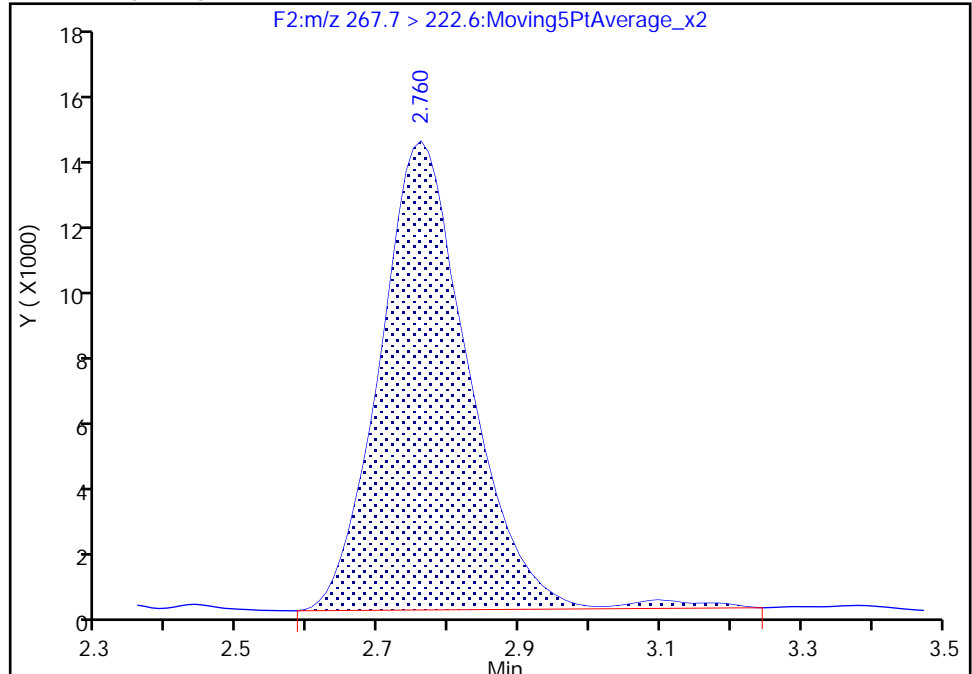
TestAmerica Burlington

Data File: \\chromna\Burlington\ChromData\LC410\20190107-34030.b\PF010719A72.d
Injection Date: 08-Jan-2019 12:01:27 Instrument ID: LC410
Lims ID: 480-147040-A-3-C MSD
Client ID: MW-09-121918
Operator ID: BC ALS Bottle#: 0 Worklist Smp#: 72
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFCISO_12MRM Limit Group: LC_PFC_ICAL
Column: Detector F2:MRM

D 3 13C5 PFPeA, CAS: STL01893
Signal: 1

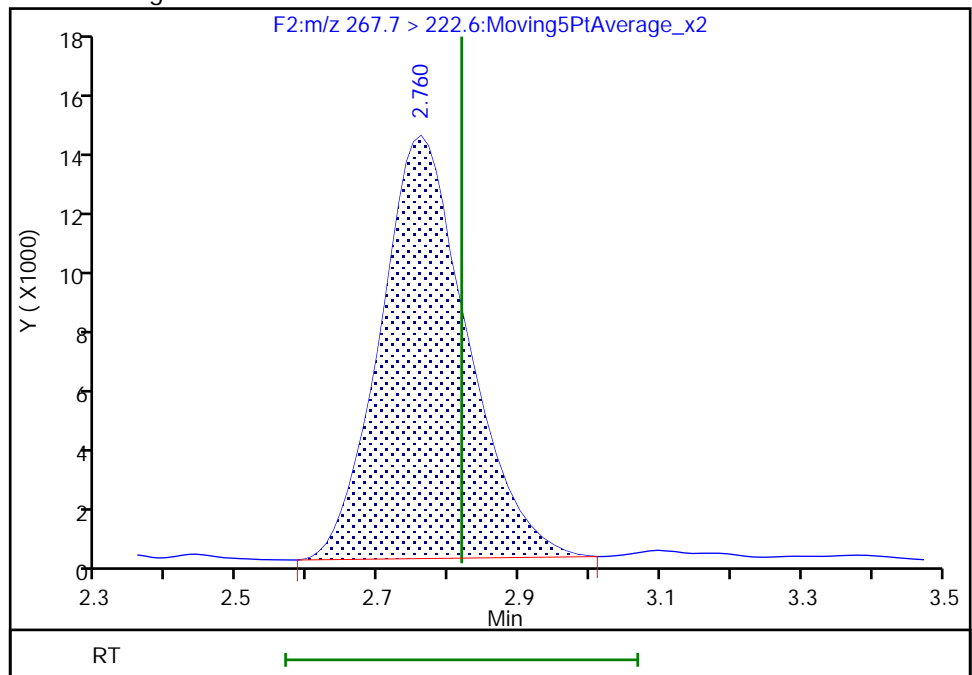
RT: 2.76
Area: 125056
Amount: 29.597109
Amount Units: ng/ml

Processing Integration Results



RT: 2.76
Area: 122488
Amount: 28.989338
Amount Units: ng/ml

Manual Integration Results



Reviewer: chirgwinb, 08-Jan-2019 17:44:19
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Instrument ID: LC410 Start Date: 10/17/2018 11:53

Analysis Batch Number: 135376 End Date: 10/18/2018 08:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		10/17/2018 11:53	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 12:16	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 12:32	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 12:48	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 13:04	1		C-18 4.6 (mm)
IC 200-135376/6		10/17/2018 13:20	1	PF101718A06.d	C-18 4.6 (mm)
IC 200-135376/7		10/17/2018 13:35	1	PF101718A07.d	C-18 4.6 (mm)
IC 200-135376/8		10/17/2018 13:51	1	PF101718A08.d	C-18 4.6 (mm)
IC 200-135376/9		10/17/2018 14:07	1	PF101718A09.d	C-18 4.6 (mm)
ICIS 200-135376/10		10/17/2018 14:23	1	PF101718A10.d	C-18 4.6 (mm)
IC 200-135376/11		10/17/2018 14:39	1	PF101718A11.d	C-18 4.6 (mm)
IC 200-135376/12		10/17/2018 14:55	1	PF101718A12.d	C-18 4.6 (mm)
IC 200-135376/13		10/17/2018 15:11	1	PF101718A13.d	C-18 4.6 (mm)
IC 200-135376/14		10/17/2018 15:27	1	PF101718A14.d	C-18 4.6 (mm)
ICB 200-135376/15		10/17/2018 15:43	1		C-18 4.6 (mm)
ICV 200-135376/16		10/17/2018 15:59	1	PF101718A16.d	C-18 4.6 (mm)
ZZZZZ		10/17/2018 16:15	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 16:31	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 16:47	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 17:03	2		C-18 4.6 (mm)
ZZZZZ		10/17/2018 17:18	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 17:34	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 17:50	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 18:06	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 18:22	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 18:38	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 18:54	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 19:10	1		C-18 4.6 (mm)
CCV 200-135376/29		10/17/2018 19:26	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 19:42	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 19:58	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 20:14	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 20:30	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 20:45	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 21:01	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 21:17	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 21:33	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 21:49	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 22:05	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 22:21	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 22:37	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 22:53	1		C-18 4.6 (mm)
CCV 200-135376/43		10/17/2018 23:08	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 23:24	1		C-18 4.6 (mm)
ZZZZZ		10/17/2018 23:40	1		C-18 4.6 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Instrument ID: LC410 Start Date: 10/17/2018 11:53

Analysis Batch Number: 135376 End Date: 10/18/2018 08:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		10/17/2018 23:56	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 00:12	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 00:28	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 00:44	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 01:00	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 01:16	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 01:31	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 01:47	1		C-18 4.6 (mm)
CCV 200-135376/54		10/18/2018 02:03	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 02:19	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 02:35	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 02:51	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 03:07	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 03:23	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 03:38	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 03:54	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 04:10	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 04:26	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 04:42	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 04:58	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 05:13	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 05:29	1		C-18 4.6 (mm)
CCV 200-135376/68		10/18/2018 05:45	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 06:01	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 06:17	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 06:33	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 06:48	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 07:04	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 07:20	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 07:36	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 07:52	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 08:08	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 08:23	1		C-18 4.6 (mm)
ZZZZZ		10/18/2018 08:39	1		C-18 4.6 (mm)
CCV 200-135376/80		10/18/2018 08:55	1		C-18 4.6 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Instrument ID: LC410 Start Date: 01/07/2019 17:05

Analysis Batch Number: 138864 End Date: 01/08/2019 18:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
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ZZZZZ		01/07/2019 17:28	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 17:44	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 18:00	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 18:16	1		C-18 4.6 (mm)
CCVIS 200-138864/6		01/07/2019 18:32	1	PF010719A06.d	C-18 4.6 (mm)
CCVL 200-138864/7		01/07/2019 18:48	1	PF010719A07.d	C-18 4.6 (mm)
CCV 200-138864/8		01/07/2019 19:03	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 19:19	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 19:35	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 19:51	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 20:07	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 20:23	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 20:39	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 20:55	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 21:10	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 21:26	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 21:42	1		C-18 4.6 (mm)
CCV 200-138864/19		01/07/2019 21:58	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 22:14	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 22:30	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 22:46	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 23:02	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 23:18	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 23:34	1		C-18 4.6 (mm)
ZZZZZ		01/07/2019 23:49	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 00:05	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 00:21	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 00:37	1		C-18 4.6 (mm)
CCV 200-138864/30		01/08/2019 00:53	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 01:09	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 01:25	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 01:41	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 01:57	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 02:13	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 02:29	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 02:44	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 03:00	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 03:16	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 03:32	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 03:48	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 04:04	1		C-18 4.6 (mm)
CCV 200-138864/43		01/08/2019 04:20	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 04:36	5		C-18 4.6 (mm)
ZZZZZ		01/08/2019 04:52	5		C-18 4.6 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Instrument ID: LC410 Start Date: 01/07/2019 17:05

Analysis Batch Number: 138864 End Date: 01/08/2019 18:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
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ZZZZZ		01/08/2019 05:24	5		C-18 4.6 (mm)
ZZZZZ		01/08/2019 05:40	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 05:55	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 06:11	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 06:27	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 06:43	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 06:59	5		C-18 4.6 (mm)
ZZZZZ		01/08/2019 07:15	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 07:31	1		C-18 4.6 (mm)
CCV 200-138864/56		01/08/2019 07:47	1	PF010719A56.d	C-18 4.6 (mm)
MB 200-138726/1-A		01/08/2019 08:02	1	PF010719A57.d	C-18 4.6 (mm)
LCS 200-138726/2-A		01/08/2019 08:18	1	PF010719A58.d	C-18 4.6 (mm)
ZZZZZ		01/08/2019 08:34	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 08:50	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 09:06	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 09:22	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 09:38	10		C-18 4.6 (mm)
ZZZZZ		01/08/2019 09:54	10		C-18 4.6 (mm)
ZZZZZ		01/08/2019 10:10	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 10:26	1		C-18 4.6 (mm)
480-147040-1		01/08/2019 10:41	1	PF010719A67.d	C-18 4.6 (mm)
480-147040-2		01/08/2019 10:57	1	PF010719A68.d	C-18 4.6 (mm)
CCV 200-138864/69		01/08/2019 11:13	1	PF010719A69.d	C-18 4.6 (mm)
480-147040-3		01/08/2019 11:29	1	PF010719A70.d	C-18 4.6 (mm)
480-147040-3 MS		01/08/2019 11:45	1	PF010719A71.d	C-18 4.6 (mm)
480-147040-3 MSD		01/08/2019 12:01	1	PF010719A72.d	C-18 4.6 (mm)
480-147040-4		01/08/2019 12:17	1	PF010719A73.d	C-18 4.6 (mm)
480-147040-5		01/08/2019 12:33	1	PF010719A74.d	C-18 4.6 (mm)
480-147040-6		01/08/2019 12:49	1	PF010719A75.d	C-18 4.6 (mm)
ZZZZZ		01/08/2019 13:05	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 13:21	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 13:37	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 13:52	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 14:08	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 14:24	1		C-18 4.6 (mm)
CCV 200-138864/82		01/08/2019 14:40	1	PF010719A82.d	C-18 4.6 (mm)
ZZZZZ		01/08/2019 14:56	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 15:12	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 15:28	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 15:44	10		C-18 4.6 (mm)
ZZZZZ		01/08/2019 16:00	10		C-18 4.6 (mm)
ZZZZZ		01/08/2019 16:16	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 16:32	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 16:48	1		C-18 4.6 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Instrument ID: LC410 Start Date: 01/07/2019 17:05

Analysis Batch Number: 138864 End Date: 01/08/2019 18:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 200-138864/91		01/08/2019 17:03	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 17:19	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 17:35	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 17:51	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 18:07	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 18:23	1		C-18 4.6 (mm)
ZZZZZ		01/08/2019 18:39	1		C-18 4.6 (mm)
CCV 200-138864/98		01/08/2019 18:55	1		C-18 4.6 (mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Batch Number: 138726 Batch Start Date: 01/02/19 13:45 Batch Analyst: Murray, John W

Batch Method: 3535 Batch End Date: 01/02/19 14:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFCIDA21 00006	LCPFAS_24SP 00002
MB 200-138726/1		3535, 537 (modified)		250 g	0 g	250 mL	0.5 mL	0.025 mL	
LCS 200-138726/2		3535, 537 (modified)		250 g	0 g	250 mL	0.5 mL	0.025 mL	0.01 mL
480-147040-A-1	FB-01-121918	3535, 537 (modified)	T	311.58 g	28.27 g	283.3 mL	0.5 mL	0.025 mL	
480-147040-A-2	EB-01-121918	3535, 537 (modified)	T	320.57 g	27.13 g	293.4 mL	0.5 mL	0.025 mL	
480-147040-A-3	MW-09-121918	3535, 537 (modified)	T	325.50 g	28.34 g	297.2 mL	0.5 mL	0.025 mL	
480-147040-A-3 MS	MW-09-121918	3535, 537 (modified)	T	300.28 g	28.47 g	271.8 mL	0.5 mL	0.025 mL	0.01 mL
480-147040-A-3 MSD	MW-09-121918	3535, 537 (modified)	T	326.76 g	28.04 g	298.7 mL	0.5 mL	0.025 mL	0.01 mL
480-147040-A-4	MW-10-121918	3535, 537 (modified)	T	314.73 g	27.85 g	286.9 mL	0.5 mL	0.025 mL	
480-147040-A-5	MW-01R-121918	3535, 537 (modified)	T	333.88 g	28.51 g	305.4 mL	0.5 mL	0.025 mL	
480-147040-A-6	FD-01-121918	3535, 537 (modified)	T	315.05 g	27.89 g	287.2 mL	0.5 mL	0.025 mL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	PFAS21 IS Stk 00006					
MB 200-138726/1		3535, 537 (modified)		0.005 mL					
LCS 200-138726/2		3535, 537 (modified)		0.005 mL					
480-147040-A-1	FB-01-121918	3535, 537 (modified)	T	0.005 mL					
480-147040-A-2	EB-01-121918	3535, 537 (modified)	T	0.005 mL					
480-147040-A-3	MW-09-121918	3535, 537 (modified)	T	0.005 mL					
480-147040-A-3 MS	MW-09-121918	3535, 537 (modified)	T	0.005 mL					
480-147040-A-3 MSD	MW-09-121918	3535, 537 (modified)	T	0.005 mL					
480-147040-A-4	MW-10-121918	3535, 537 (modified)	T	0.005 mL					
480-147040-A-5	MW-01R-121918	3535, 537 (modified)	T	0.005 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Burlington Job No.: 480-147040-1

SDG No.: _____

Batch Number: 138726 Batch Start Date: 01/02/19 13:45 Batch Analyst: Murray, John W

Batch Method: 3535 Batch End Date: 01/02/19 14:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	PFAS21 IS Stk 00006				
480-147040-A-6	FD-01-121918	3535, 537 (modified)	T	0.005 mL				

Batch Notes	
Balance ID	M02926
First End time	01/02/2019 14:30
Manifold ID	IDA 3 & 4
Rinse Solvent Lot	1225830
Rinse Solvent Name	Hexane
Solvent Lot #	1236061
Solvent Name	Methanol (0.3% NH4OH)
SPE Cartridge Lot ID	Lot 004238285A
SPE Cartridge Type	Oasis WAX 500mg
Analyst ID - Spike Analyst	JWM
Analyst ID - Spike Witness Analyst	TPB
First Start time	01/02/2019 13:45

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Subcontract Data

Shipping and Receiving Documents

From SYR; PEAS → BVT; Dioxane → BUF; -REF

Client Information Company: Jason Newton / Deb Wright O'Brien & Gere Inc of North America PO BOX 4873 City: Syracuse State, Zip: NY, 13221 Phone: 315-956-6100 Email: Jason.Newton@obg.com / Deborah.Wright@obg.com Project Name: Former Ithaca Gun Site Site: Form Ithaca Gun		Lab PM: Deyo, Melissa L E-Mail: melissa.deyo@testamericainc.com Phone: 315-956-6100 Due Date Requested: TAT Requested (days): Standard PO #: Purchase Order Requested WO #: 48019378 Project #: 48019378 SOW#:		Carrier Tracking No(s): 480-122948-28178-1 Page: Page 1 of 1 Job #: 63023			
Analysis Requested 8270D_SIM_MS_ID - 14 Dioxane FIC_IDA - PFAS, Standard List (21 analytes) Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No) Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		Total Number of containers 2 2 4 4 4 4 4 4		Special Instructions/Note: 480-147040 CC 8270D_SIM_MS_ID - 14 Dioxane			
Sample Identification FB-01-121918 EB-01-121918 MW-09-121918 MW-09-121918-MS MW-09-121918-MSD MW-10-121918 MW-01R-121918 FD-01-121918 12-19-18 AP		Sample Date 12-19-18 10:25 10:35 12:00 12:00 12:00 13:50 14:10 -		Sample Type (C=Comp, G=grab) G - - - - - - - -		Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air) Water Water Water Water Water Water Water Water Water Water Water	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify) cut B		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Empty Kit Relinquished by: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Date: 12/19/18 - 16:10 12-19-18, 19:00 Date/Time: 12/19/18 16:12 12-20-18 09:00		Method of Shipment: Received by: [Signature] Received by: [Signature] Received by: [Signature]			
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: 3.2 Z #3 1.4 J		Cooler Temperature(s) °C and Other Remarks: 3.2 Z #3 1.4 J		Ver. 08/04/2016			

From M S Y R I P F A S → B V T, D i o x a n e s → B U F - R e

Client Information
 Client Contact: Jason Newton / Deb Wright
 Address: PO BOX 4873, Syracuse, NY, 13221
 Phone: 315-956-6100
 Email: Jason.Newton@obg.com / Debraebh.Wright@obg.com
 Project Name: Former Ithaca Gun Site
 Site: Form Ithaca Gun

Lab PIM: Devo, Melissa L
 E-Mail: melissa.devo@testamericainc.com
 Lab PIM: Jason Newkirk
 Phone: 315-956-6100

Due Date Requested:
 TAT Requested (days): Standard
 PO #: 315-956-6100
 Purchase Order Requested
 WO #:
 Project #: 48019378
 SSON#:

Carrier Tracking No(s): 480-122948-28178.1
 Page: Page 1 of 8
 Job #: 63023

Analysis Requested
 Barcode: 480-147040 Chain of Custody
 FFC_IDA - PFAS, Standard List (21 analytes)
 8270D_SIM_MS_ID - 1,4 Dioxane

Special Instructions/Note:
 Preservation Codes:
 A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Anchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
 Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastefl, ST=Stress, A=Air)	Field Filtered Sample (Yes or No)	Preservation Code	Total Number of Containers	Special Instructions/Note
FB-01-121918	12-19-18	1025	G	Water	N		2	
EB-01-121918		1035		Water	N		2	
MW-09-121918		1200		Water	N		4	
MW-09-121918-MS		1200		Water	Y		4	
MW-09-121918-MSD		1200		Water	Y		4	
MW-10-121918		1350		Water	N		4	
MW-01R-121918		1410		Water	N		4	
FD-01-121918				Water	N		4	

Possible Hazard Identification
 Non-Hazard, Flammable, Skin Irritant, Poison B, Unknown, Radiological
 Deliverable Requested: I, II, III, IV, Other (specify) C and B

Empty Kit Relinquished by: [Signature]
 Relinquished by: [Signature]
 Relinquished by: [Signature]
 Relinquished by: [Signature]
 Date/Time: 12/19/18 16:12
 Date/Time: 12/20/18 11:20
 Date/Time: 12/20/18 11:20
 Company: SYR, SYR, SYR

Custody Seals Intact: Custody Seal No.:
 Yes No
 Cooler Temperature(s) °C and Other Remarks:

ORIGIN ID:SYRA (315) 431-0171
SYR SERVICE CENTER
TESTAMERICA
118 BOSS RD

SYRACUSE, NY 13211
UNITED STATES US

SHIP DATE: 19DEC18
ACTWGT: 18.00 LB MAN
CAD: 251798/CAFE3211

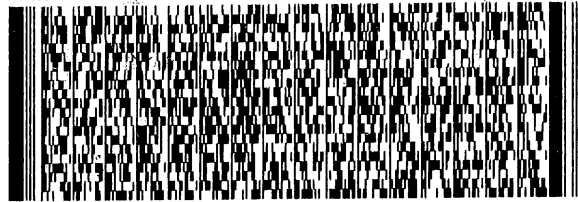
BILL RECIPIENT

TO **SAMPLE RECEIVING**
TESTAMERICA BURLINGTON
30 COMMUNITY DRIVE SUITE 11

SOUTH BURLINGTON VT 05403

(802) 660-1990

REF: OBG ITHACA 1COOLER



FedEx
Express



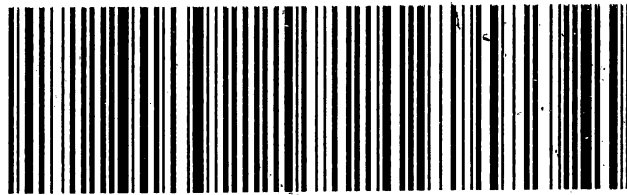
551C1/FAFE/104C
378113000001 NK

TRK# 4651 0843 3575
0201

THU - 20 DEC 10:30A
PRIORITY OVERNIGHT

XH BTVA

05403
VT-US **BTV**



Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-147040-1

Login Number: 147040
List Number: 1
Creator: Velickovic, Zoran

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	OBG
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-147040-1

Login Number: 147040
List Number: 2
Creator: McNabb, Robert W

List Source: TestAmerica Burlington
List Creation: 12/20/18 02:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	JN/KD
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**Data Usability
Summary Report**

Data Usability Summary Report

Vali-Data of WNY, LLC
1514 Davis Rd.
West Falls, NY 14170

Former Ithaca Gun
TestAmerica Laboratories, Inc. SDG#480-147040-1
February 28, 2019
Sampling date: 12/19/2018

Prepared by:
Jodi Zimmerman
Vali-Data of WNY, LLC
1514 Davis Rd.
West Falls, NY 14170

Former Ithaca Gun
SDG# 480-147040-1

DELIVERABLES

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data packages for O'Brien and Gere Inc., project located at Former Ithaca Gun , TestAmerica Laboratories, Inc. (TestAmerica), SDG#480-147040-1, submitted to Vali-Data of WNY, LLC on February 11, 2019. This DUSR has been prepared in general compliance with NYSDEC Analytical Services Protocols and USEPA National Functional Guidelines. The laboratory performed the analyses using USEPA methods SVOC (8270D SIM ID) and Fluorinated Alkyl Substances (537 modified).

SEMIVOLATILE ORGANIC COMPOUNDS (SIM ID)

The following items/criteria were reviewed for this analytical suite:

- Data Completeness
- Narrative and Data Reporting Forms
- Chain of Custody and Traffic Reports
- Holding Times
- Internal Standard (IS) Area Performance
- Surrogate Spike Recoveries
- Method Blank
- Laboratory Control Samples
- MS/MSD
- Compound Quantitation
- Initial Calibration
- Continuing Calibration
- GC/MS Performance Check

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES

The data are acceptable for use except where qualified below in MS/MSD.

DATA COMPLETENESS

All criteria were met.

NARRATIVE AND DATA REPORTING FORMS

All criteria were met.

Data was not reported to 3 significant figures. This does not affect the usability of the data.

CHAIN OF CUSTODY AND TRAFFIC REPORTS

All criteria were met.

HOLDING TIMES

All criteria were met.

INTERNAL STANDARD (IS)

All criteria were met.

SURROGATE SPIKE RECOVERIES

All criteria were met.

METHOD BLANK

All the criteria were met.

FIELD DUPLICATE SAMPLE PRECISION

All the criteria were met.

LABORATORY CONTROL SAMPLES

All criteria were met.

MS/MSD

All criteria were met except the concentration of 1,4-Dioxane exceeded calibration limits in MW-09-121918MS/MSD and is qualified with an 'E'.

COMPOUND QUANTITATION

All the criteria were met.

INITIAL CALIBRATION

All criteria were met.

CONTINUING CALIBRATION

All criteria were met.

GC/MS PERFORMANCE CHECK

All criteria were met.

PFC IDA

The following items/criteria were reviewed for this analytical suite:

- Data Completeness
- Narrative and Data Reporting Forms
- Chain of Custody and Traffic Reports
- Holding Times
- Surrogate Spike Recoveries
- Method Blank
- Field Duplicate Sample Precision
- Laboratory Control Samples
- MS/MSD
- Compound Quantitation
- Initial Calibration
- Continuing Calibration

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES

The data are acceptable for use except where qualified below in Surrogate Spike Recoveries, Method Blank and Compound Quantitation.

DATA COMPLETENESS

All criteria were met.

NARRATIVE AND DATA REPORTING FORMS

All criteria were met.

CHAIN OF CUSTODY AND TRAFFIC REPORTS

All criteria were met.

HOLDING TIMES

All holding times were met.

SURROGATE SPIKE RECOVERIES

All criteria were met except the %Rec of M2-6:2-FTS was outside QC limits, high in MW-09-121918, MW-09-121918MS/MSD, MW-10-121918 and FD-01-121918 and should be qualified as estimated high. The %Rec of M2-8:2-FTS was outside QC limits, high in MW-10-121918 and FD-01-121918 and should be qualified as estimated high. Associated target analytes in these samples should be qualified as estimated if not detected or estimated low if detected.

The %Rec of 13C2PFHxA was outside QC limits, low in MW-09-121918, MW-09-121918MS/MSD, MW-10-121918 and FD-01-121918 and should be qualified as estimated low. Associated target analytes in these samples should be qualified as estimated high if detected.

METHOD BLANK

All the criteria were met except PFUnA and PFOA were detected above the MDL, below the reporting limit and are qualified as estimated in MB 200-138726/1-A. These target analytes should be qualified as undetected at the reporting limit in associated samples in which they were detected below the reporting limit. These target analytes should be qualified as estimated high in associated samples in which they were detected above the reporting limit.

FIELD DUPLICATE SAMPLE PRECISION

All criteria were met except PFDA, PFUnA, PFDoA and PFTriA were detected in MW-10-121918 but were not detected in FD-01-121918. PFHxS was detected in FD-01-121918 but was not detected in MW-10-121918.

LABORATORY CONTROL SAMPLES

All criteria were met.

MS/MSD

All criteria were met.

COMPOUND QUANTITATION

All the criteria were met except PFOA was detected above the MDL, below the reporting limit and is qualified as estimated in FB-01-121918. This target analyte should be qualified as undetected at the reporting limit in associated samples in which it was detected below the reporting limit. This target analyte should be qualified as estimated high in associated samples in which it was detected above the reporting limit.

INITIAL CALIBRATION

All criteria were met.

Alternative forms of regression were used on target analytes in which the %RSD>35.0%, with acceptable results.

CONTINUING CALIBRATION

All criteria were met.

#sys_sample_code	lab_sample_id	chemical_name	result_value	lab_qualifiers	validator_qualifiers	method_detection_limit	reporting_detection_limit
2001387261A	2001387261A	13C2-Perfluorodecanoic acid	84.3			0	0
2001387261A	2001387261A	13C2-Perfluorododecanoic acid	68.6			0	0
2001387261A	2001387261A	13C2-Perfluorohexanoic acid	83.7			0	0
2001387261A	2001387261A	13C2-Perfluorotetradecanoic acid	59.8			0	0
2001387261A	2001387261A	13C2-Perfluoroundecanoic acid	79.8			0	0
2001387261A	2001387261A	13C3-PERFLUOROBUTANE SULFONATE	97.5			0	0
2001387261A	2001387261A	13C4-Perfluorobutanoic acid	73.4			0	0
2001387261A	2001387261A	13C4-Perfluoroheptanoic acid	78.0			0	0
2001387261A	2001387261A	13C4-Perfluorooctanesulfonate	97.1			0	0
2001387261A	2001387261A	13C4-Perfluorooctanoic acid	80.0			0	0
2001387261A	2001387261A	13C5-Perfluorononanoic acid	80.3			0	0
2001387261A	2001387261A	13C5-Perfluoropentanoic acid	103			0	0
2001387261A	2001387261A	13C8-Perfluorooctanesulfonamide	63.7			0	0
2001387261A	2001387261A	18O2-Perfluorohexanesulfonic acid	99.8			0	0
2001387261A	2001387261A	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	83.4			0	0
2001387261A	2001387261A	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	139			0	0
2001387261A	2001387261A	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U		0.56	20
2001387261A	2001387261A	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		U		1.0	20
2001387261A	2001387261A	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.45	20
2001387261A	2001387261A	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	72.2			0	0
2001387261A	2001387261A	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	59.2			0	0
2001387261A	2001387261A	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.70	20
2001387261A	2001387261A	PERFLUOROBUTANESULFONIC ACID		U		0.44	2.0
2001387261A	2001387261A	PERFLUOROBUTYRIC ACID (PFBA)		U		0.41	2.0
2001387261A	2001387261A	PERFLUORODECANE SULFONIC ACID		U		0.53	2.0
2001387261A	2001387261A	PERFLUORODECANOIC ACID (PFDA)		U		0.38	2.0
2001387261A	2001387261A	PERFLUORODODECANOIC ACID (PFD _o A)		U		0.35	2.0
2001387261A	2001387261A	PERFLUOROHEPTANE SULFONATE (PFH _p S)		U		0.82	2.0
2001387261A	2001387261A	Perfluoroheptanoic Acid (PFH _p A)		U		0.32	2.0
2001387261A	2001387261A	PERFLUOROHXANESULFONIC ACID		U		0.26	2.0
2001387261A	2001387261A	PERFLUOROHXANOIC ACID (PFH _x A)		U		0.24	2.0
2001387261A	2001387261A	PERFLUORONONANOIC ACID		U		0.38	2.0
2001387261A	2001387261A	Perfluorooctane Sulfonamide (FOSA)		U		0.56	2.0
2001387261A	2001387261A	PERFLUOROOCTANE SULFONIC ACID		U		0.76	2.0
2001387261A	2001387261A	Perfluorooctanoic acid (PFOA)	0.333	J		0.32	2.0
2001387261A	2001387261A	PERFLUOROPENTANOIC ACID (PFPeA)		U		0.75	2.0
2001387261A	2001387261A	PERFLUOROTETRADECANOIC ACID (PFT _e A)		U		0.45	2.0
2001387261A	2001387261A	PERFLUOROTRIDECANOIC ACID (PFT _{ri} A)		U		0.24	2.0
2001387261A	2001387261A	PERFLUOROUNDECANOIC ACID (PFUnA)	0.408	J		0.25	2.0
2001387262A	2001387262A	13C2-Perfluorodecanoic acid	90.2			0	0
2001387262A	2001387262A	13C2-Perfluorododecanoic acid	73.2			0	0
2001387262A	2001387262A	13C2-Perfluorohexanoic acid	87.8			0	0
2001387262A	2001387262A	13C2-Perfluorotetradecanoic acid	58.6			0	0
2001387262A	2001387262A	13C2-Perfluoroundecanoic acid	86.1			0	0
2001387262A	2001387262A	13C3-PERFLUOROBUTANE SULFONATE	111			0	0
2001387262A	2001387262A	13C4-Perfluorobutanoic acid	81.1			0	0
2001387262A	2001387262A	13C4-Perfluoroheptanoic acid	78.0			0	0
2001387262A	2001387262A	13C4-Perfluorooctanesulfonate	108			0	0
2001387262A	2001387262A	13C4-Perfluorooctanoic acid	84.2			0	0
2001387262A	2001387262A	13C5-Perfluorononanoic acid	86.2			0	0
2001387262A	2001387262A	13C5-Perfluoropentanoic acid	117			0	0
2001387262A	2001387262A	13C8-Perfluorooctanesulfonamide	89.1			0	0
2001387262A	2001387262A	18O2-Perfluorohexanesulfonic acid	98.9			0	0
2001387262A	2001387262A	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	90.6			0	0
2001387262A	2001387262A	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	138			0	0
2001387262A	2001387262A	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	42.3			0.56	20
2001387262A	2001387262A	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	40.0			1.0	20
2001387262A	2001387262A	2-(N-methyl perfluorooctanesulfonamido) acetic acid	28.7			0.45	20
2001387262A	2001387262A	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	78.1			0	0
2001387262A	2001387262A	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	71.0			0	0
2001387262A	2001387262A	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	32.5			0.70	20
2001387262A	2001387262A	PERFLUOROBUTANESULFONIC ACID	26.6			0.44	2.0
2001387262A	2001387262A	PERFLUOROBUTYRIC ACID (PFBA)	41.5			0.41	2.0
2001387262A	2001387262A	PERFLUORODECANE SULFONIC ACID	36.6			0.53	2.0
2001387262A	2001387262A	PERFLUORODECANOIC ACID (PFDA)	37.2			0.38	2.0
2001387262A	2001387262A	PERFLUORODODECANOIC ACID (PFD _o A)	43.4			0.35	2.0
2001387262A	2001387262A	PERFLUOROHEPTANE SULFONATE (PFH _p S)	34.6			0.82	2.0
2001387262A	2001387262A	Perfluoroheptanoic Acid (PFH _p A)	44.5			0.32	2.0
2001387262A	2001387262A	PERFLUOROHXANESULFONIC ACID	27.1			0.26	2.0

#sys_sample_code	lab_sample_id	chemical_name	result_value	lab_qualifiers	validator_qualifiers	method_detection_limit	reporting_detection_limit
2001387262A	2001387262A	PERFLUOROHEXANOIC ACID (PFHxA)	37.2			0.24	2.0
2001387262A	2001387262A	PERFLUORONONANOIC ACID	33.5			0.38	2.0
2001387262A	2001387262A	Perfluorooctane Sulfonamide (FOSA)	41.1			0.56	2.0
2001387262A	2001387262A	PERFLUOROOCTANE SULFONIC ACID	37.9			0.76	2.0
2001387262A	2001387262A	Perfluorooctanoic acid (PFOA)	40.9			0.32	2.0
2001387262A	2001387262A	PERFLUOROPENTANOIC ACID (PFPeA)	29.2			0.75	2.0
2001387262A	2001387262A	PERFLUOROTETRADECANOIC ACID (PFTeA)	39.1			0.45	2.0
2001387262A	2001387262A	PERFLUOROTRIDECANOIC ACID (PFTriA)	47.5			0.24	2.0
2001387262A	2001387262A	PERFLUOROUNDECANOIC ACID (PFUnA)	41.4			0.25	2.0
4804522861A	4804522861A	1,4-DIOXANE (P-DIOXANE)		U		0.10	0.20
4804522861A	4804522861A	1,4-DIOXANE-D8	3.49			0	0
4804522862A	4804522862A	1,4-DIOXANE (P-DIOXANE)				0.10	0.20
4804522862A	4804522862A	1,4-DIOXANE-D8	3.38			0	0
EB-01-121918	480-147040-2	13C2-Perfluorodecanoic acid	71			0	0
EB-01-121918	480-147040-2	13C2-Perfluorododecanoic acid	55			0	0
EB-01-121918	480-147040-2	13C2-Perfluorohexanoic acid	72			0	0
EB-01-121918	480-147040-2	13C2-Perfluorotetradecanoic acid	50			0	0
EB-01-121918	480-147040-2	13C2-Perfluoroundecanoic acid	67			0	0
EB-01-121918	480-147040-2	13C3-PERFLUOROBUTANE SULFONATE	64			0	0
EB-01-121918	480-147040-2	13C4-Perfluorobutanoic acid	63			0	0
EB-01-121918	480-147040-2	13C4-Perfluoroheptanoic acid	70			0	0
EB-01-121918	480-147040-2	13C4-Perfluorooctanesulfonate	78			0	0
EB-01-121918	480-147040-2	13C4-Perfluorooctanoic acid	71			0	0
EB-01-121918	480-147040-2	13C5-Perfluorononanoic acid	71			0	0
EB-01-121918	480-147040-2	13C5-Perfluoropentanoic acid	81			0	0
EB-01-121918	480-147040-2	13C8-Perfluorooctanesulfonamide	42			0	0
EB-01-121918	480-147040-2	18O2-Perfluorohexanesulfonic acid	77			0	0
EB-01-121918	480-147040-2	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	72			0	0
EB-01-121918	480-147040-2	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	100			0	0
EB-01-121918	480-147040-2	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U		0.48	17
EB-01-121918	480-147040-2	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		U		0.85	17
EB-01-121918	480-147040-2	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.38	17
EB-01-121918	480-147040-2	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	59			0	0
EB-01-121918	480-147040-2	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	53			0	0
EB-01-121918	480-147040-2	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.60	17
EB-01-121918	480-147040-2	PERFLUOROBUTANESULFONIC ACID		U		0.37	1.7
EB-01-121918	480-147040-2	PERFLUOROBUTYRIC ACID (PFBA)		U		0.35	1.7
EB-01-121918	480-147040-2	PERFLUORODECANE SULFONIC ACID		U		0.45	1.7
EB-01-121918	480-147040-2	PERFLUORODECANOIC ACID (PFDA)		U		0.32	1.7
EB-01-121918	480-147040-2	PERFLUORODODECANOIC ACID (PFDoA)		U		0.30	1.7
EB-01-121918	480-147040-2	PERFLUOROHEPTANE SULFONATE (PFHpS)		U		0.70	1.7
EB-01-121918	480-147040-2	Perfluoroheptanoic Acid (PFHpA)		U		0.27	1.7
EB-01-121918	480-147040-2	PERFLUOROHEXANESULFONIC ACID		U		0.22	1.7
EB-01-121918	480-147040-2	PERFLUOROHEXANOIC ACID (PFHxA)		U		0.20	1.7
EB-01-121918	480-147040-2	PERFLUORONONANOIC ACID		U		0.32	1.7
EB-01-121918	480-147040-2	Perfluorooctane Sulfonamide (FOSA)		U		0.48	1.7
EB-01-121918	480-147040-2	PERFLUOROOCTANE SULFONIC ACID		U		0.65	1.7
EB-01-121918	480-147040-2	Perfluorooctanoic acid (PFOA)		U		0.27	1.7
EB-01-121918	480-147040-2	PERFLUOROPENTANOIC ACID (PFPeA)		U		0.64	1.7
EB-01-121918	480-147040-2	PERFLUOROTETRADECANOIC ACID (PFTeA)		U		0.38	1.7
EB-01-121918	480-147040-2	PERFLUOROTRIDECANOIC ACID (PFTriA)		U		0.20	1.7
EB-01-121918	480-147040-2	PERFLUOROUNDECANOIC ACID (PFUnA)		U		0.21	1.7
FB-01-121918	480-147040-1	13C2-Perfluorodecanoic acid	75			0	0
FB-01-121918	480-147040-1	13C2-Perfluorododecanoic acid	59			0	0
FB-01-121918	480-147040-1	13C2-Perfluorohexanoic acid	77			0	0
FB-01-121918	480-147040-1	13C2-Perfluorotetradecanoic acid	47			0	0
FB-01-121918	480-147040-1	13C2-Perfluoroundecanoic acid	70			0	0
FB-01-121918	480-147040-1	13C3-PERFLUOROBUTANE SULFONATE	83			0	0
FB-01-121918	480-147040-1	13C4-Perfluorobutanoic acid	70			0	0
FB-01-121918	480-147040-1	13C4-Perfluoroheptanoic acid	72			0	0
FB-01-121918	480-147040-1	13C4-Perfluorooctanesulfonate	78			0	0
FB-01-121918	480-147040-1	13C4-Perfluorooctanoic acid	74			0	0
FB-01-121918	480-147040-1	13C5-Perfluorononanoic acid	70			0	0
FB-01-121918	480-147040-1	13C5-Perfluoropentanoic acid	89			0	0
FB-01-121918	480-147040-1	13C8-Perfluorooctanesulfonamide	44			0	0
FB-01-121918	480-147040-1	18O2-Perfluorohexanesulfonic acid	82			0	0
FB-01-121918	480-147040-1	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	73			0	0
FB-01-121918	480-147040-1	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	100			0	0
FB-01-121918	480-147040-1	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U		0.49	18

#sys_sample_code	lab_sample_id	chemical_name	result_value	lab_qualifiers	validator_qualifiers	method_detection_limit	reporting_detection_limit
FB-01-121918	480-147040-1	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		U		0.88	18
FB-01-121918	480-147040-1	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.40	18
FB-01-121918	480-147040-1	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	63			0	0
FB-01-121918	480-147040-1	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	56			0	0
FB-01-121918	480-147040-1	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.62	18
FB-01-121918	480-147040-1	PERFLUOROBUTANESULFONIC ACID		U		0.39	1.8
FB-01-121918	480-147040-1	PERFLUOROBUTYRIC ACID (PFBA)		U		0.36	1.8
FB-01-121918	480-147040-1	PERFLUORODECANE SULFONIC ACID		U		0.47	1.8
FB-01-121918	480-147040-1	PERFLUORODECANOIC ACID (PFDA)		U		0.34	1.8
FB-01-121918	480-147040-1	PERFLUORODODECANOIC ACID (PFDoA)		U		0.31	1.8
FB-01-121918	480-147040-1	PERFLUOROHEPTANE SULFONATE (PFHpS)		U		0.72	1.8
FB-01-121918	480-147040-1	Perfluoroheptanoic Acid (PFHpA)		U		0.28	1.8
FB-01-121918	480-147040-1	PERFLUOROHEXANESULFONIC ACID		U		0.23	1.8
FB-01-121918	480-147040-1	PERFLUOROHEXANOIC ACID (PFHxA)		U		0.21	1.8
FB-01-121918	480-147040-1	PERFLUORONONANOIC ACID		U		0.34	1.8
FB-01-121918	480-147040-1	Perfluorooctane Sulfonamide (FOSA)		U		0.49	1.8
FB-01-121918	480-147040-1	PERFLUOROOCTANE SULFONIC ACID		U		0.67	1.8
FB-01-121918	480-147040-1	Perfluorooctanoic acid (PFOA)	1.8	BJ	U	0.28	1.8
FB-01-121918	480-147040-1	PERFLUOROPENTANOIC ACID (PFPeA)		U		0.66	1.8
FB-01-121918	480-147040-1	PERFLUOROTETRADECANOIC ACID (PFTeA)		U		0.40	1.8
FB-01-121918	480-147040-1	PERFLUOROTRIDECANOIC ACID (PFTriA)		U		0.21	1.8
FB-01-121918	480-147040-1	PERFLUOROUNDECANOIC ACID (PFUnA)		U		0.22	1.8
FD-01-121918	480-147040-6	1,4-DIOXANE (P-DIOXANE)	0.20			0.10	0.20
FD-01-121918	480-147040-6	1,4-DIOXANE-D8	3.2			0	0
FD-01-121918	480-147040-6	13C2-Perfluorodecanoic acid	91			0	0
FD-01-121918	480-147040-6	13C2-Perfluorododecanoic acid	87			0	0
FD-01-121918	480-147040-6	13C2-Perfluorohexanoic acid	34	T	JL	0	0
FD-01-121918	480-147040-6	13C2-Perfluorotetradecanoic acid	91			0	0
FD-01-121918	480-147040-6	13C2-Perfluoroundecanoic acid	93			0	0
FD-01-121918	480-147040-6	13C3-PERFLUOROBUTANE SULFONATE	58			0	0
FD-01-121918	480-147040-6	13C4-Perfluorobutanoic acid	28			0	0
FD-01-121918	480-147040-6	13C4-Perfluoroheptanoic acid	52			0	0
FD-01-121918	480-147040-6	13C4-Perfluorooctanesulfonate	96			0	0
FD-01-121918	480-147040-6	13C4-Perfluorooctanoic acid	67			0	0
FD-01-121918	480-147040-6	13C5-Perfluorononanoic acid	75			0	0
FD-01-121918	480-147040-6	13C5-Perfluoropentanoic acid	29			0	0
FD-01-121918	480-147040-6	13C8-Perfluorooctanesulfonamide	73			0	0
FD-01-121918	480-147040-6	18O2-Perfluorohexanesulfonic acid	87			0	0
FD-01-121918	480-147040-6	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	180	T	JH	0	0
FD-01-121918	480-147040-6	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	230	T	JH	0	0
FD-01-121918	480-147040-6	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U	UJ	0.49	17
FD-01-121918	480-147040-6	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		U	UJ	0.87	17
FD-01-121918	480-147040-6	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.39	17
FD-01-121918	480-147040-6	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	84			0	0
FD-01-121918	480-147040-6	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	71			0	0
FD-01-121918	480-147040-6	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.61	17
FD-01-121918	480-147040-6	PERFLUOROBUTANESULFONIC ACID	3.5			0.38	1.7
FD-01-121918	480-147040-6	PERFLUOROBUTYRIC ACID (PFBA)	7.0			0.36	1.7
FD-01-121918	480-147040-6	PERFLUORODECANE SULFONIC ACID		U		0.46	1.7
FD-01-121918	480-147040-6	PERFLUORODECANOIC ACID (PFDA)		U		0.33	1.7
FD-01-121918	480-147040-6	PERFLUORODODECANOIC ACID (PFDoA)		U		0.30	1.7
FD-01-121918	480-147040-6	PERFLUOROHEPTANE SULFONATE (PFHpS)		U		0.71	1.7
FD-01-121918	480-147040-6	Perfluoroheptanoic Acid (PFHpA)	1.6	J		0.28	1.7
FD-01-121918	480-147040-6	PERFLUOROHEXANESULFONIC ACID	0.34	J		0.23	1.7
FD-01-121918	480-147040-6	PERFLUOROHEXANOIC ACID (PFHxA)	3.0		JH	0.21	1.7
FD-01-121918	480-147040-6	PERFLUORONONANOIC ACID	0.52	J		0.33	1.7
FD-01-121918	480-147040-6	Perfluorooctane Sulfonamide (FOSA)		U		0.49	1.7
FD-01-121918	480-147040-6	PERFLUOROOCTANE SULFONIC ACID	5.2			0.66	1.7
FD-01-121918	480-147040-6	Perfluorooctanoic acid (PFOA)	5.1	B	JH	0.28	1.7
FD-01-121918	480-147040-6	PERFLUOROPENTANOIC ACID (PFPeA)	9.2			0.65	1.7
FD-01-121918	480-147040-6	PERFLUOROTETRADECANOIC ACID (PFTeA)		U		0.39	1.7
FD-01-121918	480-147040-6	PERFLUOROTRIDECANOIC ACID (PFTriA)		U		0.21	1.7
FD-01-121918	480-147040-6	PERFLUOROUNDECANOIC ACID (PFUnA)		U		0.22	1.7
MW-01R-121918	480-147040-5	1,4-DIOXANE (P-DIOXANE)		U		0.10	0.20
MW-01R-121918	480-147040-5	1,4-DIOXANE-D8	3.2			0	0
MW-01R-121918	480-147040-5	13C2-Perfluorodecanoic acid	59			0	0
MW-01R-121918	480-147040-5	13C2-Perfluorododecanoic acid	52			0	0
MW-01R-121918	480-147040-5	13C2-Perfluorohexanoic acid	49			0	0
MW-01R-121918	480-147040-5	13C2-Perfluorotetradecanoic acid	52			0	0

#sys_sample_code	lab_sample_id	chemical_name	result_value	lab_qualifiers	validator_qualifiers	method_detection_limit	reporting_detection_limit
MW-01R-121918	480-147040-5	13C2-Perfluoroundecanoic acid	60			0	0
MW-01R-121918	480-147040-5	13C3-PERFLUOROBUTANE SULFONATE	72			0	0
MW-01R-121918	480-147040-5	13C4-Perfluorobutanoic acid	64			0	0
MW-01R-121918	480-147040-5	13C4-Perfluoroheptanoic acid	54			0	0
MW-01R-121918	480-147040-5	13C4-Perfluorooctanesulfonate	73			0	0
MW-01R-121918	480-147040-5	13C4-Perfluorooctanoic acid	57			0	0
MW-01R-121918	480-147040-5	13C5-Perfluorononanoic acid	62			0	0
MW-01R-121918	480-147040-5	13C5-Perfluoropentanoic acid	57			0	0
MW-01R-121918	480-147040-5	13C8-Perfluorooctanesulfonamide	51			0	0
MW-01R-121918	480-147040-5	18O2-Perfluorohexanesulfonic acid	79			0	0
MW-01R-121918	480-147040-5	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	74			0	0
MW-01R-121918	480-147040-5	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	110			0	0
MW-01R-121918	480-147040-5	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U		0.46	16
MW-01R-121918	480-147040-5	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		U		0.82	16
MW-01R-121918	480-147040-5	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.37	16
MW-01R-121918	480-147040-5	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	51			0	0
MW-01R-121918	480-147040-5	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	43			0	0
MW-01R-121918	480-147040-5	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.57	16
MW-01R-121918	480-147040-5	PERFLUOROBUTANESULFONIC ACID	1.8			0.36	1.6
MW-01R-121918	480-147040-5	PERFLUOROBUTYRIC ACID (PFBA)	10			0.34	1.6
MW-01R-121918	480-147040-5	PERFLUORODECANE SULFONIC ACID		U		0.43	1.6
MW-01R-121918	480-147040-5	PERFLUORODECANOIC ACID (PFDA)		U		0.31	1.6
MW-01R-121918	480-147040-5	PERFLUORODODECANOIC ACID (PFDoA)		U		0.29	1.6
MW-01R-121918	480-147040-5	PERFLUOROHEPTANE SULFONATE (PFHpS)		U		0.67	1.6
MW-01R-121918	480-147040-5	Perfluoroheptanoic Acid (PFHpA)	3.1			0.26	1.6
MW-01R-121918	480-147040-5	PERFLUOROHEXANESULFONIC ACID	0.49	J		0.21	1.6
MW-01R-121918	480-147040-5	PERFLUOROHEXANOIC ACID (PFHxA)	11			0.20	1.6
MW-01R-121918	480-147040-5	PERFLUORONONANOIC ACID		U		0.31	1.6
MW-01R-121918	480-147040-5	Perfluorooctane Sulfonamide (FOSA)		U		0.46	1.6
MW-01R-121918	480-147040-5	PERFLUOROOCTANE SULFONIC ACID	2.6			0.62	1.6
MW-01R-121918	480-147040-5	Perfluorooctanoic acid (PFOA)	5.6	B	JH	0.26	1.6
MW-01R-121918	480-147040-5	PERFLUOROPENTANOIC ACID (PFPeA)	11			0.61	1.6
MW-01R-121918	480-147040-5	PERFLUOROTETRADECANOIC ACID (PFTeA)		U		0.37	1.6
MW-01R-121918	480-147040-5	PERFLUOROTRIDECANOIC ACID (PFTriA)		U		0.20	1.6
MW-01R-121918	480-147040-5	PERFLUOROUNDDECANOIC ACID (PFUnA)		1.6 BJ	U	0.20	1.6
MW-09-121918	480-147040-3	1,4-DIOXANE (P-DIOXANE)	0.47			0.10	0.20
MW-09-121918	480-147040-3	1,4-DIOXANE-D8	2.9			0	0
MW-09-121918	480-147040-3	13C2-Perfluorodecanoic acid	78			0	0
MW-09-121918	480-147040-3	13C2-Perfluorododecanoic acid	71			0	0
MW-09-121918	480-147040-3	13C2-Perfluoroheptanoic acid	38	T	JL	0	0
MW-09-121918	480-147040-3	13C2-Perfluorotetradecanoic acid	64			0	0
MW-09-121918	480-147040-3	13C2-Perfluoroundecanoic acid	79			0	0
MW-09-121918	480-147040-3	13C3-PERFLUOROBUTANE SULFONATE	60			0	0
MW-09-121918	480-147040-3	13C4-Perfluorobutanoic acid	48			0	0
MW-09-121918	480-147040-3	13C4-Perfluoroheptanoic acid	52			0	0
MW-09-121918	480-147040-3	13C4-Perfluorooctanesulfonate	83			0	0
MW-09-121918	480-147040-3	13C4-Perfluorooctanoic acid	71			0	0
MW-09-121918	480-147040-3	13C5-Perfluorononanoic acid	72			0	0
MW-09-121918	480-147040-3	13C5-Perfluoropentanoic acid	44			0	0
MW-09-121918	480-147040-3	13C8-Perfluorooctanesulfonamide	53			0	0
MW-09-121918	480-147040-3	18O2-Perfluorohexanesulfonic acid	70			0	0
MW-09-121918	480-147040-3	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	97			0	0
MW-09-121918	480-147040-3	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	150	T	JH	0	0
MW-09-121918	480-147040-3	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U		0.47	17
MW-09-121918	480-147040-3	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	4.3	J	JL	0.84	17
MW-09-121918	480-147040-3	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.38	17
MW-09-121918	480-147040-3	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	65			0	0
MW-09-121918	480-147040-3	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	52			0	0
MW-09-121918	480-147040-3	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.59	17
MW-09-121918	480-147040-3	PERFLUOROBUTANESULFONIC ACID	1.6	J		0.37	1.7
MW-09-121918	480-147040-3	PERFLUOROBUTYRIC ACID (PFBA)	8.4			0.34	1.7
MW-09-121918	480-147040-3	PERFLUORODECANE SULFONIC ACID		U		0.45	1.7
MW-09-121918	480-147040-3	PERFLUORODECANOIC ACID (PFDA)		U		0.32	1.7
MW-09-121918	480-147040-3	PERFLUORODODECANOIC ACID (PFDoA)		U		0.29	1.7
MW-09-121918	480-147040-3	PERFLUOROHEPTANE SULFONATE (PFHpS)		U		0.69	1.7
MW-09-121918	480-147040-3	Perfluoroheptanoic Acid (PFHpA)	2.9			0.27	1.7
MW-09-121918	480-147040-3	PERFLUOROHEXANESULFONIC ACID	0.28	J		0.22	1.7
MW-09-121918	480-147040-3	PERFLUOROHEXANOIC ACID (PFHxA)	9.7		JH	0.20	1.7
MW-09-121918	480-147040-3	PERFLUORONONANOIC ACID	0.57	J		0.32	1.7

#sys_sample_code	lab_sample_id	chemical_name	result_value	lab_qualifiers	validator_qualifiers	method_detection_limit	reporting_detection_limit
MW-09-121918	480-147040-3	Perfluorooctane Sulfonamide (FOSA)		U		0.47	1.7
MW-09-121918	480-147040-3	PERFLUOROOCTANE SULFONIC ACID	2.3			0.64	1.7
MW-09-121918	480-147040-3	Perfluorooctanoic acid (PFOA)	5.8	B	JH	0.27	1.7
MW-09-121918	480-147040-3	PERFLUOROPENTANOIC ACID (PFPeA)	12			0.63	1.7
MW-09-121918	480-147040-3	PERFLUOROTETRADECANOIC ACID (PFTeA)		U		0.38	1.7
MW-09-121918	480-147040-3	PERFLUOROTRIDECANOIC ACID (PFTriA)		U		0.20	1.7
MW-09-121918	480-147040-3	PERFLUOROUNDECANOIC ACID (PFUnA)		U		0.21	1.7
MW-09-121918MS	480-147040-3MS	1,4-DIOXANE (P-DIOXANE)	1.52	E		0.10	0.20
MW-09-121918MS	480-147040-3MS	1,4-DIOXANE-D8	3.11			0	0
MW-09-121918MS	480-147040-3MS	13C2-Perfluorodecanoic acid	83.8			0	0
MW-09-121918MS	480-147040-3MS	13C2-Perfluorododecanoic acid	78.6			0	0
MW-09-121918MS	480-147040-3MS	13C2-Perfluorohexanoic acid	40.5	T	JL	0	0
MW-09-121918MS	480-147040-3MS	13C2-Perfluorotetradecanoic acid	72.8			0	0
MW-09-121918MS	480-147040-3MS	13C2-Perfluoroundecanoic acid	83.8			0	0
MW-09-121918MS	480-147040-3MS	13C3-PERFLUOROBUTANE SULFONATE	60.8			0	0
MW-09-121918MS	480-147040-3MS	13C4-Perfluorobutanoic acid	53.1			0	0
MW-09-121918MS	480-147040-3MS	13C4-Perfluoroheptanoic acid	57.2			0	0
MW-09-121918MS	480-147040-3MS	13C4-Perfluorooctanesulfonate	82.3			0	0
MW-09-121918MS	480-147040-3MS	13C4-Perfluorooctanoic acid	72.4			0	0
MW-09-121918MS	480-147040-3MS	13C5-Perfluorononanoic acid	78.2			0	0
MW-09-121918MS	480-147040-3MS	13C5-Perfluoropentanoic acid	45.6			0	0
MW-09-121918MS	480-147040-3MS	13C8-Perfluorooctanesulfonamide	55.3			0	0
MW-09-121918MS	480-147040-3MS	18O2-Perfluorohexanesulfonic acid	71.4			0	0
MW-09-121918MS	480-147040-3MS	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	111			0	0
MW-09-121918MS	480-147040-3MS	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	178	T	JH	0	0
MW-09-121918MS	480-147040-3MS	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	33.6			0.52	18
MW-09-121918MS	480-147040-3MS	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	37.3		JL	0.92	18
MW-09-121918MS	480-147040-3MS	2-(N-methyl perfluorooctanesulfonamido) acetic acid	23.4			0.41	18
MW-09-121918MS	480-147040-3MS	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	74.3			0	0
MW-09-121918MS	480-147040-3MS	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	65.7			0	0
MW-09-121918MS	480-147040-3MS	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	26.9			0.64	18
MW-09-121918MS	480-147040-3MS	PERFLUOROBUTANESULFONIC ACID	30.4			0.40	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROBUTYRIC ACID (PFBA)	41.5			0.38	1.8
MW-09-121918MS	480-147040-3MS	PERFLUORODECANE SULFONIC ACID	35.1			0.49	1.8
MW-09-121918MS	480-147040-3MS	PERFLUORODECANOIC ACID (PFDA)	33.5			0.35	1.8
MW-09-121918MS	480-147040-3MS	PERFLUORODODECANOIC ACID (PFD _o A)	36.5			0.32	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROHEPTANE SULFONATE (PFHpS)	33.6			0.75	1.8
MW-09-121918MS	480-147040-3MS	Perfluoroheptanoic Acid (PFHpA)	41.5			0.29	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROHXANESULFONIC ACID	27.5			0.24	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROHXANOIC ACID (PFHxA)	41.9		JH	0.22	1.8
MW-09-121918MS	480-147040-3MS	PERFLUORONONANOIC ACID	30.3			0.35	1.8
MW-09-121918MS	480-147040-3MS	Perfluorooctane Sulfonamide (FOSA)	34.2			0.52	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROOCTANE SULFONIC ACID	37.8			0.70	1.8
MW-09-121918MS	480-147040-3MS	Perfluorooctanoic acid (PFOA)	38.4			0.29	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROPENTANOIC ACID (PFPeA)	43.5			0.69	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROTETRADECANOIC ACID (PFTeA)	30.7			0.41	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROTRIDECANOIC ACID (PFTriA)	35.9			0.22	1.8
MW-09-121918MS	480-147040-3MS	PERFLUOROUNDECANOIC ACID (PFUnA)	35.8			0.23	1.8
MW-09-121918SD	480-147040-3SD	1,4-DIOXANE (P-DIOXANE)	1.47	E		0.10	0.20
MW-09-121918SD	480-147040-3SD	1,4-DIOXANE-D8	2.78			0	0
MW-09-121918SD	480-147040-3SD	13C2-Perfluorodecanoic acid	73.9			0	0
MW-09-121918SD	480-147040-3SD	13C2-Perfluorododecanoic acid	65.5			0	0
MW-09-121918SD	480-147040-3SD	13C2-Perfluorohexanoic acid	36.6	T	JL	0	0
MW-09-121918SD	480-147040-3SD	13C2-Perfluorotetradecanoic acid	57.9			0	0
MW-09-121918SD	480-147040-3SD	13C2-Perfluoroundecanoic acid	71.9			0	0
MW-09-121918SD	480-147040-3SD	13C3-PERFLUOROBUTANE SULFONATE	55.9			0	0
MW-09-121918SD	480-147040-3SD	13C4-Perfluorobutanoic acid	47.6			0	0
MW-09-121918SD	480-147040-3SD	13C4-Perfluoroheptanoic acid	51.2			0	0
MW-09-121918SD	480-147040-3SD	13C4-Perfluorooctanesulfonate	80.7			0	0
MW-09-121918SD	480-147040-3SD	13C4-Perfluorooctanoic acid	65.5			0	0
MW-09-121918SD	480-147040-3SD	13C5-Perfluorononanoic acid	71.9			0	0
MW-09-121918SD	480-147040-3SD	13C5-Perfluoropentanoic acid	48.5			0	0
MW-09-121918SD	480-147040-3SD	13C8-Perfluorooctanesulfonamide	50.5			0	0
MW-09-121918SD	480-147040-3SD	18O2-Perfluorohexanesulfonic acid	71.7			0	0
MW-09-121918SD	480-147040-3SD	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	94.1			0	0
MW-09-121918SD	480-147040-3SD	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	156	T	JH	0	0
MW-09-121918SD	480-147040-3SD	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)	34.6			0.47	17
MW-09-121918SD	480-147040-3SD	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	37.9		JL	0.84	17
MW-09-121918SD	480-147040-3SD	2-(N-methyl perfluorooctanesulfonamido) acetic acid	27.1			0.38	17

#sys_sample_code	lab_sample_id	chemical_name	result_value	lab_qualifiers	validator_qualifiers	method_detection_limit	reporting_detection_limit
MW-09-121918SD	480-147040-3SD	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	60.8			0	0
MW-09-121918SD	480-147040-3SD	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	48.5			0	0
MW-09-121918SD	480-147040-3SD	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	28.1			0.59	17
MW-09-121918SD	480-147040-3SD	PERFLUOROBUTANESULFONIC ACID	26.9			0.37	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROBUTYRIC ACID (PFBA)	40.8			0.34	1.7
MW-09-121918SD	480-147040-3SD	PERFLUORODECANE SULFONIC ACID	30.1			0.44	1.7
MW-09-121918SD	480-147040-3SD	PERFLUORODECANOIC ACID (PFDA)	33.3			0.32	1.7
MW-09-121918SD	480-147040-3SD	PERFLUORODODECANOIC ACID (PFD _o A)	36.3			0.29	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROHEPTANE SULFONATE (PFHpS)	30.2			0.69	1.7
MW-09-121918SD	480-147040-3SD	Perfluoroheptanoic Acid (PFHpA)	41.7			0.27	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROHEXANESULFONIC ACID	25.6			0.22	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROHEXANOIC ACID (PFHxA)	43.0		JH	0.20	1.7
MW-09-121918SD	480-147040-3SD	PERFLUORONONANOIC ACID	30.3			0.32	1.7
MW-09-121918SD	480-147040-3SD	Perfluorooctane Sulfonamide (FOSA)	35.0			0.47	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROOCTANE SULFONIC ACID	33.7			0.64	1.7
MW-09-121918SD	480-147040-3SD	Perfluorooctanoic acid (PFOA)	40.6			0.27	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROPENTANOIC ACID (PFPeA)	39.0			0.63	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROTETRADECANOIC ACID (PFTeA)	30.6			0.38	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROTRIDECANOIC ACID (PFTriA)	33.8			0.20	1.7
MW-09-121918SD	480-147040-3SD	PERFLUOROUNDECANOIC ACID (PFUnA)	35.4			0.21	1.7
MW-10-121918	480-147040-4	1,4-DIOXANE (P-DIOXANE)	0.21			0.10	0.20
MW-10-121918	480-147040-4	1,4-DIOXANE-D8	3.1			0	0
MW-10-121918	480-147040-4	13C2-Perfluorodecanoic acid	86			0	0
MW-10-121918	480-147040-4	13C2-Perfluorododecanoic acid	85			0	0
MW-10-121918	480-147040-4	13C2-Perfluorohexanoic acid	30	T	JL	0	0
MW-10-121918	480-147040-4	13C2-Perfluorotetradecanoic acid	89			0	0
MW-10-121918	480-147040-4	13C2-Perfluoroundecanoic acid	93			0	0
MW-10-121918	480-147040-4	13C3-PERFLUOROBUTANE SULFONATE	55			0	0
MW-10-121918	480-147040-4	13C4-Perfluorobutanoic acid	21			0	0
MW-10-121918	480-147040-4	13C4-Perfluoroheptanoic acid	51			0	0
MW-10-121918	480-147040-4	13C4-Perfluorooctanesulfonate	87			0	0
MW-10-121918	480-147040-4	13C4-Perfluorooctanoic acid	68			0	0
MW-10-121918	480-147040-4	13C5-Perfluorononanoic acid	74			0	0
MW-10-121918	480-147040-4	13C5-Perfluoropentanoic acid	28			0	0
MW-10-121918	480-147040-4	13C8-Perfluorooctanesulfonamide	63			0	0
MW-10-121918	480-147040-4	18O2-Perfluorohexanesulfonic acid	79			0	0
MW-10-121918	480-147040-4	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate (8:2)	180	T	JH	0	0
MW-10-121918	480-147040-4	1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate (6:2)	210	T	JH	0	0
MW-10-121918	480-147040-4	1H,1H,2H,2H-Perfluorodecane Sulfonate (8:2)		U	UJ	0.49	17
MW-10-121918	480-147040-4	1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)		U	UJ	0.87	17
MW-10-121918	480-147040-4	2-(N-methyl perfluorooctanesulfonamido) acetic acid		U		0.39	17
MW-10-121918	480-147040-4	N-deuterioethylperfluoro-1-octanesulfonamidoacetic acid	86			0	0
MW-10-121918	480-147040-4	N-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid	58			0	0
MW-10-121918	480-147040-4	N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine		U		0.61	17
MW-10-121918	480-147040-4	PERFLUOROBUTANESULFONIC ACID	3.5			0.38	1.7
MW-10-121918	480-147040-4	PERFLUOROBUTYRIC ACID (PFBA)	6.1			0.36	1.7
MW-10-121918	480-147040-4	PERFLUORODECANE SULFONIC ACID		U		0.46	1.7
MW-10-121918	480-147040-4	PERFLUORODECANOIC ACID (PFDA)	0.49	J		0.33	1.7
MW-10-121918	480-147040-4	PERFLUORODODECANOIC ACID (PFD _o A)	0.32	J		0.30	1.7
MW-10-121918	480-147040-4	PERFLUOROHEPTANE SULFONATE (PFHpS)		U		0.71	1.7
MW-10-121918	480-147040-4	Perfluoroheptanoic Acid (PFHpA)	1.9			0.28	1.7
MW-10-121918	480-147040-4	PERFLUOROHEXANESULFONIC ACID		U		0.23	1.7
MW-10-121918	480-147040-4	PERFLUOROHEXANOIC ACID (PFHxA)	3.3		JH	0.21	1.7
MW-10-121918	480-147040-4	PERFLUORONONANOIC ACID	0.44	J		0.33	1.7
MW-10-121918	480-147040-4	Perfluorooctane Sulfonamide (FOSA)		U		0.49	1.7
MW-10-121918	480-147040-4	PERFLUOROOCTANE SULFONIC ACID	5.1			0.66	1.7
MW-10-121918	480-147040-4	Perfluorooctanoic acid (PFOA)	3.2	B	JH	0.28	1.7
MW-10-121918	480-147040-4	PERFLUOROPENTANOIC ACID (PFPeA)	11			0.65	1.7
MW-10-121918	480-147040-4	PERFLUOROTETRADECANOIC ACID (PFTeA)		U		0.39	1.7
MW-10-121918	480-147040-4	PERFLUOROTRIDECANOIC ACID (PFTriA)	0.27	J		0.21	1.7
MW-10-121918	480-147040-4	PERFLUOROUNDECANOIC ACID (PFUnA)		1.7 BJ	U	0.22	1.7